

State of Nature 2024

Guernsey and Herm



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State of Nature 2024 Guernsey and Herm

Guernsey Nature Commission

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**The Nature Commission
hope this report provides
a foundation for positive
environmental change for
Guernsey and Herm**



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Glossary

ACLMS: Agriculture, Countryside and Land Management Services, States of Guernsey.

Anthropogenic: 'caused by humans'. Anthropogenic refers to effects, direct or indirect, of humans on nature.

Area of Biodiversity Importance (ABI): Designated sites afforded protection within the Island Development Plan in recognition of their local ecological importance.

Agreement of the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS): This convention was approved in 1991 as part of the Bonn Convention and aims to protect migratory cetaceans. Guernsey is signed up to this agreement.

Bern Convention: The Bern Convention was created in 1979, as a legally binding instrument for nature conservation. It involves protecting natural habitats and endangered species. Species are classed in appendices according to levels of protection. Guernsey is not signed up to this agreement.

Biodiversity: The diversity of life present, including genes, species, habitats and ecosystems, as well as life found at molecular, organism, and population levels (States of Guernsey, 2015a).

Bonn Convention: Also known as the Convention on the Conservation of Migratory Species of Wild Animals. It provides a global platform for the conservation and sustainable use of migratory animals and their habitats. Species are listed in appendices of varying states of protection. Guernsey signed up to this agreement in 1985. Reporting is required as part of this convention.

Biodiversity Partnership Group (BPG): Made up of representatives from a number of NGOs in Guernsey which hold a mandated interest in the conservation of the natural environment, as well as qualified experts in conservation, ecology and land management. The purpose of the BPG is to advise the States of Guernsey, and more recently the Guernsey Nature Commission, on the delivery and direction of the Biodiversity Strategy/ Strategy for Nature.

British Trust for Ornithology (BTO): An organisation founded in 1932 for the study of birds in the British Isles.

Competition: Refers to the interaction between species where there is a limited resource for which they are both competing. The winning species will out-compete its rivals.

Convention of Biological Diversity (CBD): Ratified in 1992, this is an international legally binding treaty with three main goals: conservation of biodiversity; sustainable use

of biodiversity; and the fair and equitable sharing of the benefits arising from the use of genetic resources. As of May 2024, Guernsey is not signed up to this agreement.

Disturbance: Disturbance is an event experienced that can cause damage to the vegetation of an area. In some habitats, disturbance can reduce biodiversity by causing the loss of sensitive species, whereas other habitats require a moderate level of disturbance to prevent harmful domination by a particular vegetation type (Hayward & Scopes, 2019a).

Environmental Impact Assessment (EIA): Assessment of environmental consequences of a development.

Endemic: Native flora and fauna that is restricted to a specific area or region and is not naturally found anywhere else.

Fauna: Species of animal.

Flora: Species of plant.

Greenfield Sites: As defined in the Island Development Plan, greenfield sites are open land areas that have not been developed other than for agricultural, horticultural, leisure or recreational purposes.

Guernsey Society for the Prevention of Cruelty to Animals (GSPCA): The GSPCA is a local charity that has been caring for animals in Guernsey for 150 years. They aim to promote kindness to animals via education. They look after lost pets, unwanted/mistreated animals and sick wildlife.

Improvement: The improvement of land for agriculture with the aim of improving agricultural yields, through e.g. application of pesticides/fertilisers, or ploughing and reseeded land, (Hayward & Scopes, 2019a).

Island Development Plan (IDP): Adopted in 2016 by the States of Guernsey, the IDP, together with other statutory approved plans forms the land use planning framework for Guernsey.

Island gigantism: Occurs when animals grow larger than their mainland relatives due to isolation in an island area.

International Union for Conservation of Nature's (IUCN) Red List: Established in 1964, the IUCN Red List of threatened species is the world's most comprehensive information source on the global extinction risk status of animal, fungus and plant species. Species are assessed and then assigned a category depending on thresholds met. Categories include: Not Evaluated, Data Deficient, Least Concern, Near Threatened, Vulnerable, Endangered, Critically Endangered, Extinct in the Wild, and Extinct.



Monoculture: An area of only one species.

Native Species: Those that historically would be present in Guernsey after colonising the island naturally i.e. without influence by human transportation (Hayward & Scopes, 2019a).

Non-Native Species: Non-native species are those that historically would not be present in Guernsey but are present due to the aid of human transportation (Hayward & Scopes, 2019a).

OSPAR Commission: Created in 1992. The mechanism by which 15 Governments & the EU cooperate to protect the marine environment of the North-East Atlantic. Based on the Oslo (OS) and Paris (PAR) conventions which covered dumping, land-based sources of marine pollution and the offshore industry.

Priority Habitat: Habitats assessed based on international rarity, distribution of habitat, importance of European habitats, where habitats provide good conditions for a high diversity of species or if they support rare and threatened species. Habitats were prioritised if they contribute to wider conservation efforts and if the habitat contributes to the conservation of rare/threatened species (Pinel, 2022).

Priority Species: Species assessed based on at local status (population size, rarity, trends and distribution) and inclusion in international conventions (Pinel, 2022).

Ramsar: Ramsar is a place in Iran where the Convention on Wetlands of International Importance was signed. The Convention aims to conserve wetlands and their resources. Countries signed to the Convention must designate at least

1 wetland site as a Wetland of International Importance (Ramsar site). Guernsey is signed up to this agreement and has 2 sites: Lihou Island and L'Erée Headland, and Herm, Jethou and The Humps.

Sites of Special Significance (SSS): Designated areas afforded protection within the Island Development Plan in recognition of their archaeological, botanical, geological, scientific, cultural, zoological or other special interest.

Succession: A process where plant and animal communities give way to another community in succession until a stable climax community is reached. For example, in the absence of disturbance, the change of grassland to scrub and then woodland (Hayward & Scopes, 2019a).

The Habitats Directive: An EU Directive which aims to protect species and characteristic habitat types, and ensure they are maintained or restored to favourable conservation status within the EU.

UK Biodiversity Action Plan (BAP) Priority Species: Species identified as being the most threatened and requiring conservation action under the UK Biodiversity Action Plan. The original list of UK BAP Priority Species was created between 1995 and 1999. In 2007, a revised list was produced, following a 2-year review. Following the review, the list of UK BAP Priority Species increased from less than 600 to 1,150.

Unsympathetic Management: Land management that is not appropriate for the habitat. This may include lack of management or intensive management. Examples could be under or overgrazing of an area.

Foreword



Lieutenant General Richard Cripwell CB, CBE

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The Nature Commission

State of Nature in Guernsey and Herm

As the patron of the Nature Commission, I have seen for myself the enthusiasm and passion of islanders for the conservation of the natural environment. The publication of this first-ever State of Nature report for Guernsey and Herm is a landmark event in the work being conducted on both islands.

I firmly believe that nature underpins our inherent prosperity and wellbeing and that we must learn to live alongside wildlife and make space for nature. We are very lucky to have access to beautiful habitats, but there have been alarming declines in biodiversity globally and wildlife on islands is vulnerable. This report will be an essential tool for the communities of Guernsey and Herm to better understand their natural environment and to determine what can be done to protect and promote biodiversity in the Bailiwick.

We are reaching a crucial point in the struggle to conserve our wildlife and wild spaces and our actions now will define the state of nature for years to come. We can all make a difference together and I strongly commend this report.

Richard Cripwell

Understanding nature leads to caring for nature



1. Introduction

This State of Nature report has been produced to provide information on the state of habitats and species on the islands of Guernsey, Lihou, Herm, Jethou and The Humps. It provides, where data is available, a benchmark for the status of our natural environment which can be used as a comparison in later years and help guide conservation efforts by government, industry, the third sector, businesses, and the general public.

It also highlights pressures on our species and habitats so that we can better understand what is driving changes – this will help build evidence-driven management of our natural environment. Additionally, the report identifies areas for further research. The intention will be to update the State of Nature report every five years, providing the opportunity to further our knowledge and highlight new areas of research.

Living on an island means having access to the benefits of terrestrial and marine habitats with all the wildlife found in these areas and the ecosystem services they can provide. Islands are unique, famed for their biodiversity and can be home to species found nowhere else in the world. These endemic species have become adapted to the habitats and conditions of the islands and are unlikely to survive elsewhere. Some of these endemic species have evolved peculiar traits, such as island gigantism. This is a fascinating insight into evolution and part of what makes islands so special. Islands only make up 6.7% of the world's land mass but are home to 20% of global flora and fauna. However, wildlife on islands are also more vulnerable with 50% of all threatened species found in these biodiversity hotspots (Fernández-Palacios et al.,

2021). As well as supporting wildlife, islands are relied upon by 600 million people (1/10th of the world's population) (UN Environment Programme, 2024). This leads to competition between humans and wildlife for the limited resources available.

On islands, invasive species have caused 86% of known extinctions since 1500 and are the primary driver of island extinctions (Spatz et al., 2017). Many invasive species are bought into islands by anthropogenic sources; in Guernsey and Herm examples include Brown Rats (*Rattus norvegicus*) and Sour Fig (*Carpobrotus edulis*). Globally, islands have been subjected to over 700 successful eradication programs of invasive non-native mammals such as rats and cats. This shows it is possible for humans to correct the mistakes made by their ancestors which resulted in the loss of native wildlife. Other human-induced pressures include climate change, pollution, habitat loss through development and land-use change, and unsustainable extraction of natural resources. The likelihood of island species being driven to extinction by humans is 12 times higher than that of continental species. Unfortunately, 75% of the 800 known extinctions since the



European global expansion have been on islands (Fernández-Palacios et al., 2021). The increased effects of anthropogenic pressures on island wildlife are a worrying prelude to the fate of our global environment.

Guernsey has a total land area of 63km² and Herm has a total of 2km²; they are both located in the English Channel. Both islands are part of the Bailiwick of Guernsey, consisting of multiple islands across 3 jurisdictions: Guernsey, Sark and Alderney. Guernsey is 27 miles from the French coast and around 70 miles from the south coast of England, and this geographical position influences some of the species found on-island. 14,000 different species and many diverse habitats are found on the island. Due to the mild maritime climate, Guernsey and Herm have many species not found further north in the British Isles (David, 2011). There are also species that are not found anywhere else, like the Guernsey Vole (*Microtus arvalis sarnius*), a subspecies of the Common Vole, which is 10% bigger than the European species (Carpenter, 2018). Tidal ranges around the Bailiwick are extremely large, up to 10m, leading to a large and biodiverse marine intertidal environment. Our marine environment receives nutrient inputs from the Gulf Stream which helps create unique marine ecosystems that differ from the English coasts further north and the European coasts further south and east. Bailiwick waters are nationally and internationally important in supporting seabirds, with British and biogeographic populations of more than 1% of 9 different species found here seasonally. However, according to the UK State of Nature report 2019, 5.6% of Guernsey surviving species have been assessed as globally threatened with extinction on the IUCN Red list (Hayhow et al., 2019). 80 species of animals and plants are thought to have become locally extinct in Guernsey in the past 100 years (States of Guernsey, 2015b).

Islanders have a moral duty to protect and care for the natural environment to ensure its existence for future generations. It is possible for humans to reverse the damage they have done. In the last 30 years, 65% of global island bird species threatened with extinction were saved by conservation actions (Fernández-Palacios et al., 2021). Conservation of threatened species as well as protection and restoration of habitats is necessary to preserve wildlife. Other important ways to help protect the natural environment include increasing our overall knowledge. In Guernsey and Herm, there are large gaps in data relating to the natural

environment, which makes it hard to understand where issues exist or how best to prioritise conservation efforts. There has been some attempt to address this with the publication of the Red Data Book for Guernsey in 2020; this document looked at natural, semi-natural and human-made habitats and the specialist species associated with these habitats (Gilmour & David, 2020). However, this document was only able to provide an assessment of the state of a very small range of species, with many being excluded due to lack of available data. Therefore, this State of Nature report is considered to be the first-ever holistic assessment of Guernsey and Herm's natural environment. This report links to the 2020 Strategy for Nature, identifying association with relevant indicators where suitable data is available.

2020 Strategy for Nature

The Strategy for Nature provides a framework for the government, private sector and community to strengthen Guernsey's response to the pressures facing nature. It has three main aims:

- Connect our island community with nature
- Care for nature to ensure the diversity and resilience of our natural capital and assets
- Foster and share knowledge about nature

The document refers to a number of indicators which could be used as a measure of the progress being made towards these goals. This State of Nature report will help meet some of these indicators by providing information on:

- the extent and condition of designated areas and habitat connectivity
- the changes in Living Planet Index¹
- status of key species and habitats particularly changes in abundance and distribution

which can then be used to:

- integrate biodiversity into schools and further education curriculums
- integrate robust biodiversity data and knowledge into the States of Guernsey decision-making

80 species of animals and plants are thought to have become locally extinct in the past 100 years

¹ <https://www.livingplanetindex.org/>

**All human life depends on
services provided by our
natural environment**





2. Why Nature Matters

Why do we need to monitor the state of nature? Why is it important to look after our wildlife, habitats, and the connections between them?

Let us start with the basics. Plants and other photosynthetic organisms provide humans with the oxygen they need to survive. 50% of global oxygen is produced by our oceans. Without this, human life on earth would eventually cease to exist. Plants and other primary producers are also the foundation of the food web, which humans are dependent on. Food webs play a vital part in supporting complex, interconnected ecosystems.

Ecosystem Services:

Ecosystem services are the direct and indirect contributions that ecosystems provide for human well-being and quality of life. All human life depends on ecosystem services for necessities such as clean air and food production (Parliamentary Office of Science and Technology, 2007). They are often grouped into 4 services based on the type of benefit they provide for society (Tallis et al., 2013).

- **Provisioning services** – includes the production of goods such as food, water, timber and fibre. An example of this in Guernsey is our grasslands which provide food for the Guernsey cow which provides us with local milk.
- **Regulating services** – includes natural services that stabilise the climate; protect us from flooding; and improve water quality. An example of this in Guernsey are our coastal habitats such as sand dunes and kelp forests. When healthy, these will help protect our coastline from extreme weather events, reducing the negative impact of storm surges and wave action on our homes, business, and other infrastructure.
- **Cultural services** – the provision of recreational, aesthetic, educational and community opportunities. An example in Guernsey are our natural areas, such as beaches and reserves, which give locals and visitors opportunities to enjoy outdoor activities, spot wildlife, and connect with nature. This is also linked to improved physical and mental health and well-being.

- **Supporting services** – services that underpin the provision of the other three categories such as nutrient cycling, soil formation, and photosynthesis. An example of this in Guernsey is the creation of productive soils for growing crops for local food production through the accumulation and assimilation of organic matter.

Humans have modified ecosystems to increase the economic value of provisioning services, such as food production. These modifications cause disruptions to the delicate balances in ecosystems, affecting the natural environment's ability to provide other ecosystem services, including the ability to regulate the climate.

Despite being around for 0.007% of Earth's 4.5-billion-year history, humans have caused lasting and potentially irreversible damage to our ecosystems, processes and biodiversity. There are very few places left on Earth that have been untouched by humans. Around 78% of the Earth's surface is considered anthropogenic biomes (Russell & Kueffer, 2019) meaning that over three-quarters of the land on Earth has been altered by humans. The Earth is currently in the midst of a 6th mass extinction at an unprecedented rate – caused by people. Being on an island does not shield us from that crisis, with Guernsey and Herm more vulnerable due to small populations of species.

People are discovering the direct benefits of the natural environment; being connected with nature boosts our mental health and well-being. However, a 2018 UK study found that children spent only 4 hours outside per week which is 50% less than their parents did when they were young (Kennedy, 2018). Most children struggle to identify common plant and animal species, which affects their appreciation of the natural environment. Education and awareness are crucial, with many organisations helping children and adults to learn about the natural environment. By teaching our communities to recognise nature and its right to exist alongside and in harmony with humans, we will ensure the survival of our natural environment, and therefore us, into the future.

Altering our natural environment disrupts its ability to provide the services we rely on



Herm Island
Michelle Griffiths

3. Evidence

A desktop review was conducted, to identify existing available data from Guernsey and Herm in regard to the natural environment. Relevant data sources were identified, and the quality of data assessed. Evidence in this report includes primary data, such as original data from on-island studies, and secondary data which includes reports interpreting the original data. There is also some grey literature included in the form of government documents and the Red Data Book for Guernsey.

The evidence in this report is sourced from:

- Guernsey Biological Records Centre (GBRC)
- States of Guernsey – Agriculture, Countryside and Land Management Services (ACLMS)
- Partner organisations
- Citizen science projects
- Public and local case studies and reports, and anecdotal evidence

Comprehensive datasets across habitats and species are limited in Guernsey and Herm. Several habitats and species groups are poorly understood, and for the majority of species there is currently not enough data of sufficient quality to enable trends to be determined with accuracy. Several projects have only collected data for a single year, providing a snapshot rather than being representative of changes over time. A large proportion of the data used in the report is anecdotal or held by individuals and organisations,

due to the absence of a co-ordinated, fully functioning Records Centre. While archival data is stored at the Records Centre, it is anticipated that most of the recent data is not held there. This report uses the best available data, and the limitations of this data are described in each section.

We are constantly learning about our island's natural environment. Future State of Nature products for Guernsey and Herm will aim to fill in the current gaps in our knowledge. Setting up long-term consistent data collection and recording schemes will enable future reports to include trend data. Applying trends to data is a statistical technique that allows the accurate evaluation of patterns, or changes in the data over time beyond those which may occur coincidentally, or which are not immediately obvious. Trends can help us to predict future outcomes and enable us to understand which areas of nature need a helping hand. Evidence such as this enables targeted conservation, allowing us to make the best use of available resources. Ongoing monitoring will demonstrate whether these conservation measures are successful.



4. Conservation Action Timeline

This timeline shows how much has been achieved for nature in Guernsey and Herm from 2013-2023. These recent years have been very exciting in terms of wildlife conservation. Environmental awareness and pressure to better protect and enhance our natural environment has led to the expansion of environmental understanding and engagement in Guernsey, particularly within the third sector. As a result, this has seen many new organisations and projects being set up.

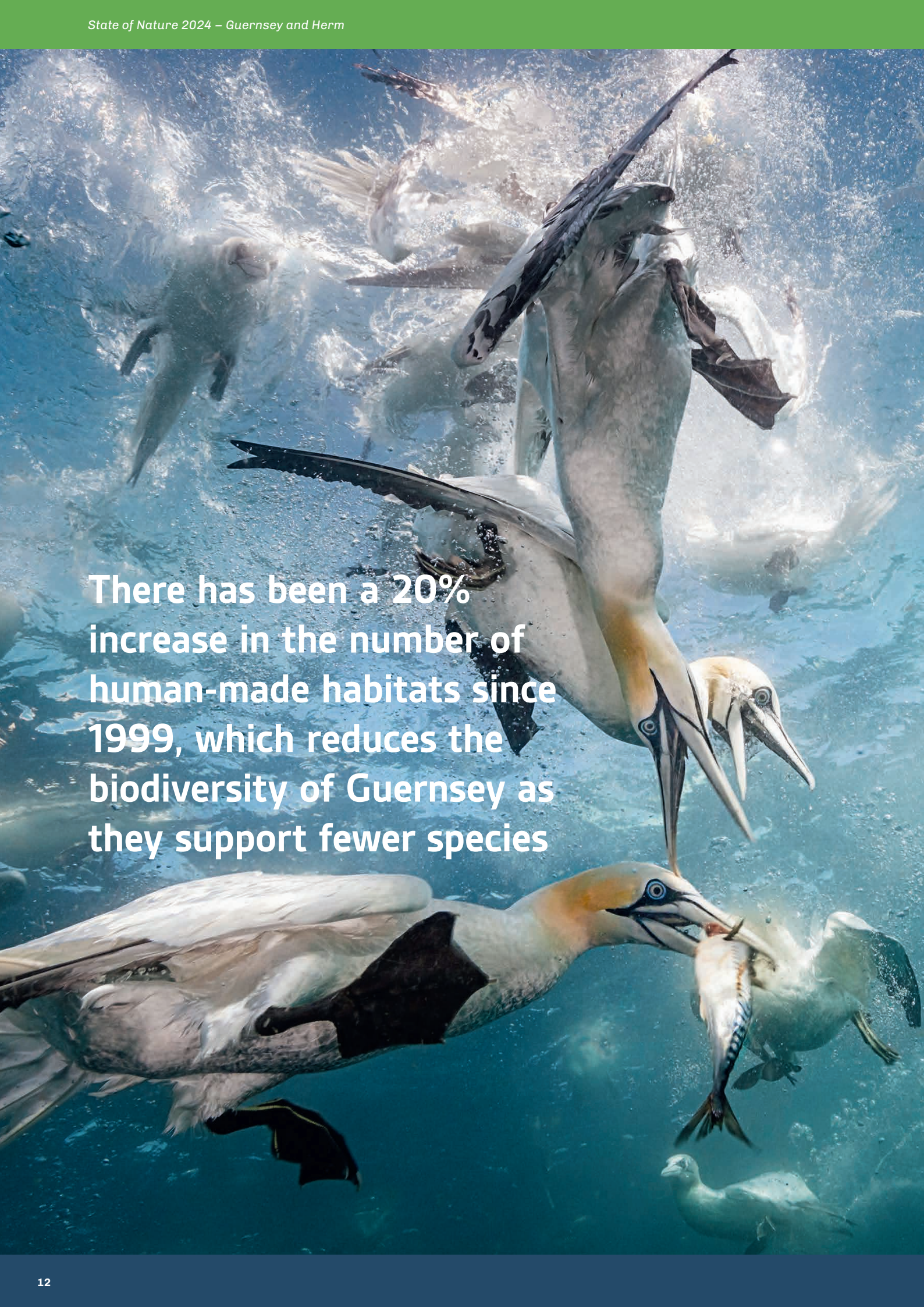


Several of these actions are very important in the expansion of nature conservation in Guernsey and Herm:

- The 3 UK State of Nature reports provide the most comprehensive view of species trends across the UK. These reports provide Guernsey and Herm with a basis for the formation of their own State of Nature report. There is also a section about the Crown Dependencies, which provides an opportunity to compare the conservation strategies and initiatives for the Bailiwick of Jersey, Bailiwick of Guernsey and Isle of Man.
- One of the main purposes of the Island Development Plan, is to conserve and enhance the best of Guernsey's physical environment. The plan consists of a land use planning policy framework, including policies to prevent the loss of important habitats to development. It is an important tool in preserving our green spaces, especially designated Sites of Special Significance (SSS) and Areas of Biodiversity Importance (ABI). Guernsey's Strategy for Nature is a

Supplementary Planning Guidance document appended to the Island Development Plan.

- The BPG facilitates the collaboration of environmental NGOs in Guernsey, in order to advise and deliver Guernsey's Strategy for Nature. The partnership has seen successful collaborations and the launch of projects to raise public awareness and contribution to biological recording, such as the BioBlitz, an annual citizen science event.
- The Habitat Survey 2018 is the latest publication of an important piece of monitoring work, that helps track the changes in habitat overtime at a landscape scale and has highlighted the loss of habitat in Guernsey and Herm since 1999. These results can then be used to inform policy and conservation actions for habitat restoration projects and areas in need of protection, as well as being an important reference for environmental impact assessments and decision-making.



There has been a 20% increase in the number of human-made habitats since 1999, which reduces the biodiversity of Guernsey as they support fewer species

5. State of Habitats

Understanding the state of our habitats involves reviewing what habitats are present in Guernsey Herm and surrounding waters, the area they cover, and their overall value for wildlife.

Value for wildlife depends on the condition and extent of the habitat and the species it supports. Habitats in 'favourable' condition are doing well and are likely to continue thriving in the future. The state of habitats has been well monitored in some respects. 3 terrestrial Habitat Surveys have been conducted in Guernsey and Herm, in 1999, 2010 and 2018. Despite Guernsey being a small island, 41 terrestrial habitats (JNCC Phase 1 classification) were identified during the surveys. 25 of these habitats have been prioritised as part of the States of Guernsey Priority Habitat and Species Assessment (Pinel, 2022). While thorough terrestrial habitat surveys have been conducted to establish their extent, the quality of these habitats needs further assessment. A condition assessment was carried out by the States of Guernsey in 2023 and is a great start, although the results are not yet available to be used within this report. It will allow for targeted conservation measures in the future by identifying habitats in need of restoration. Marine habitats are not quite so well studied and are lacking in data and quality assessments. The marine environment presents many challenges to surveying, particularly in the benthic and pelagic zones. More work is needed in this area.

5.1 Natural Habitats

Natural habitats are classed as existing prior to human occupation in Guernsey. They have become increasingly more managed but are still found in Guernsey and Herm, and often support a high diversity of plants and associated animals. The following habitat types (JNCC Phase 1 designations) have been grouped into 'natural terrestrial habitats' and the grouping is used as an indicator of abundance of species-rich natural land.

Coastal grassland, coastal heathland, dune grasslands, dune heath and dune slack, semi-improved marshy grassland, unimproved marshy grassland, unimproved grassland, semi-improved grassland, coastal rock, maritime cliff, and coastal shingle.

In 2018, the amount of land classified as one of these natural habitats totalled 217ha or 3.5% of Guernsey's land area (Hayward & Scopes, 2019a). This is a 63% decline since the first habitat survey, with natural habitats totalling 372ha or 5.7% in 1999. As these areas are much more biodiverse than human-made or intensively managed habitats, the decline in these habitats is likely to lead to an associated loss of biodiversity.

There has been a 20% increase in the number of human-made habitats such as parkland and cultivated land since 1999. This also reduces the biodiversity of Guernsey as these habitats support fewer species. Generally, human-made habitats are subject to intensive management within which fewer species are able to survive.

5.1.1 Changes over time

Habitats can change over time, which may be due to differences in management, differences in climate, or introduction of invasive species. For example, lack of

management in a meadow may lead to scrub and Bracken (*Pteridium aquilinum*) taking over; across the 3 island-wide habitat surveys, changes such as this will be detected through changes in habitat classifications. The amount of change in classifications of natural land has been identified through the habitat surveys².

Over the last 20 years since the first terrestrial habitat survey:

- **32%** of Guernsey has remained relatively stable and has not changed
- **43%** of the island has gone through one habitat change
- **16%** has undergone 2 different habitat changes
- **9.2%** of the area has gone through one change then reverted to their original habitat designation.

Interestingly, most coastal habitats have remained relatively stable with no habitat changes over the previous habitat surveys.

Overall, **68.2%** of habitat has undergone at least one change within the last 20 years (see Figure 1), demonstrating how fluid and quickly habitats have changed on the island.

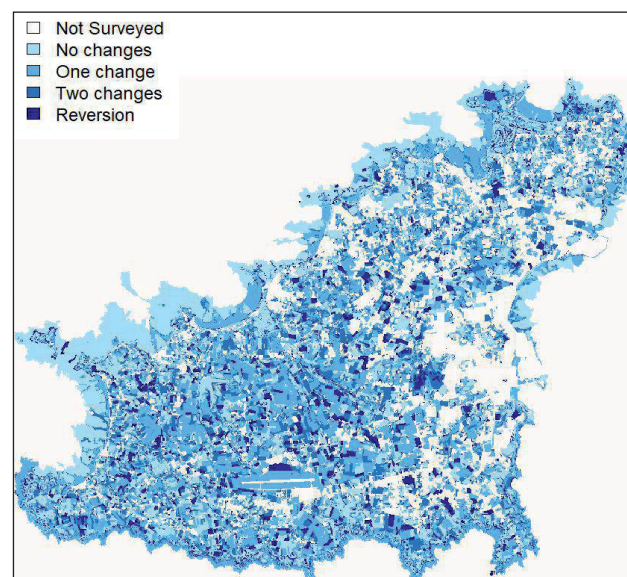


Figure 1 The amount of habitat change present in Guernsey over the three surveys (Hayward & Scopes, 2019a)

5.1.2 Protection

Out of the three Crown Dependencies, the Bailiwick of Guernsey has the lowest protection for marine habitats, with only Ramsar sites making up the protected areas for marine (see section '5.6 State of Marine Habitats'). While areas of our terrestrial natural land can be designated as SSS and ABI, these designations are a matter of planning policy. They afford protection through control of development but are not equivalent to wildlife protection laws enforced in other jurisdictions (see Table 1).

² One change represents habitats that have changed to another habitat once over the 3 surveys but has remained the same habitat before/after this change. Two changes represent two different habitat changes over the 3 surveys. Reversion is when a habitat has undergone a single change but then changed back to its original 1999 designation, perhaps due to reintroduction of management techniques.

Crown Dependency ³	Terrestrial and Freshwater (% coverage)	Marine (% coverage)
Bailiwick of Guernsey (J. Henney, personal communication, 2024c)	12.5	1
Isle of Man (Burns et al., 2023)	12.3	5.5
Bailiwick of Jersey* (Protected Planet, 2024)	17.8	6.3

Table 1 The proportion of terrestrial, freshwater and marine habitats designated as protected areas across the Crown Dependencies

If we are to preserve our natural environment or even consider restoration, stronger protection is needed. The designation of protected areas is recognised as a key mechanism for nature conservation and can have benefits for people and nature.

5.2 State of Grasslands

There are 4 types of grassland in Guernsey and Herm – dune (see section ‘5.5.10 Dune Habitat’), coastal (see section ‘5.5.1 Coastal Grassland’), dry and marshy grassland. Dry and marshy grasslands are further classified by the degree of agricultural improvement they have received, for example the application of artificial fertilisers and pesticides or history of ploughing or reseeded. The dominant grassland type in Guernsey is improved grassland which makes up 97% of dry grassland. Improved grasslands are less biodiverse than semi-improved and unimproved grassland, as they may have been ploughed and re-seeded or received applications of fertilisers and herbicides, removing any sensitive flora from the sward (Hayward & Scopes, 2019a). As of 2018, no areas of unimproved dry grassland were identified in Guernsey, and semi-improved dry grassland was recorded to have declined by 90% (see Figure 2). Unimproved grassland has been classed as a Priority Habitat by the States of Guernsey due to its loss locally, and so it aims to promote re-establishment. The extinction of this habitat is due to intensive management for agriculture or amenity, and more recently, some areas have been lost due to lack of management which has allowed them to become rank or succeed to scrub. This was one of the most diverse habitats in Guernsey and supported many delicate plants. Restoration projects for unimproved grassland are the next step, although it is not a quick or easy process.

Improved Grassland is the dominant habitat in Herm, making up 23% of its terrestrial area in 2018 (Hayward & Scopes, 2019a). Semi-improved dry grassland has also been found in Herm. This habitat has declined by 96% since 1999, with the most declines between 2010 and 2018. This is due to succession of scrub, agricultural improvement and woodland planting. No areas of unimproved dry grassland were identified in Herm in the 2018 Habitat Survey. Dune and coastal grassland have been recorded in Herm (see sections ‘5.5.1 Coastal Grassland’ and ‘5.5.10 Dune Habitat’).

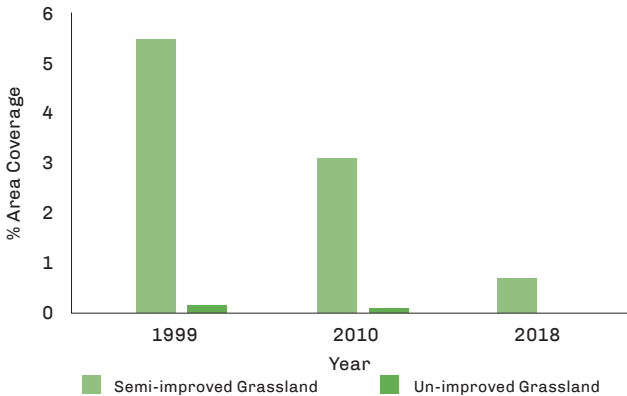


Figure 2 Percentage total area of natural dry grassland found in Guernsey from 1999-2018 (Hayward & Scopes, 2019a)

*The Jersey terrestrial figures include the Coastal National Park designation in which development must protect or improve the landscape and seascape character rather than preserve wildlife. In 2023 Jersey put forward proposals to extend their marine protected area coverage to 25.9% and identified areas for future consideration for protection.

The habitat type marshy grassland is further split into unimproved and semi-improved grassland (although semi-improved marshy grassland has only been included as a separate classification since 2010) (See Table 2).

Both these habitats are Priority Habitats and support high levels of biodiversity - they can support 50-70 plant species in small areas, and up to 100 species in large areas. They are also particularly good for birds and insects. Overall, in Guernsey unimproved and semi-improved marshy grassland have declined by 37% since 1999 (see Figure 3). These habitats are very diverse – historical reductions in this habitat have already led to extinctions of several wet grassland species such as Three-lobed Beggarticks (*Bidens tripartita*), a species of flowering plant.

A large proportion of our biodiverse marshy grasslands are designated as SSSIs. Many are also owned by local NGOs and managed as nature reserves which help protect them from development or inappropriate management. Sensitive long-term management is needed to maintain these habitats and prevent succession to woodland over the long term.

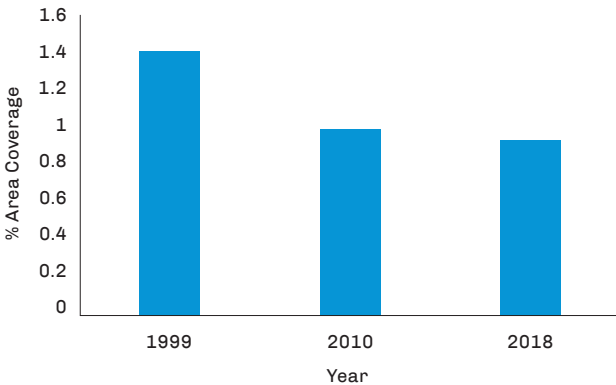


Figure 3 Percentage total area of marshy grassland found in Guernsey from 1999-2018 (Hayward & Scopes, 2019a)

5.2.1 Associated Native Species:



Loose flowered orchid
(*Anacamptis laxiflora*)
Julie Davis

Loose-flowered Orchid (*Anacamptis laxiflora*) is not found in the UK. The Channel Islands are the northerly edge of its range.

This species thrives in low-lying wetland meadows like the Bridget Ozanne Orchid Fields.



Habitat	1999 -2018 (ha)	1999 -2018 (%)	2010 -2018 (ha)	2010 -2018 (%)
Semi-improved Marshy Grassland*	N/A	N/A	1	1.9
Unimproved Marshy Grassland*	N/A	N/A	-4.6	-58
Semi-improved Grassland	-316	-90	-158	-81
Unimproved Grassland	-3.1	-100	-2.1	-100

Table 2 The proportional change in the area for the 4 types of natural dry and marshy grassland (Hayward & Scopes, 2019a)

*In the 2010 Habitat Survey, Marshy Grassland was split into Unimproved and Semi-improved categories, so it is not possible to determine if any changes since 1999 are due to reclassification or genuine loss of habitat.

5.2.2 Threats

- Improvements for agriculture purposes
- Overgrazing
- Drainage of marshy grassland
- Lack of appropriate land management

See section '7. Drivers of Change' for more information.

5.3 State of Woodlands and Hedges

5.3.1 Woodlands

Woodland in Guernsey falls into 5 broad categories, largely based on the origin of the trees (e.g. planted or not) and whether the trees are broadleaved or coniferous (see Table 3). Only 1 category, Semi-natural Broadleaved Woodland is classed as a Priority Habitat. This habitat is also the most abundant type of woodland, accounting for 3.2% of Guernsey's total area.

Table 3 The proportional change in area for the 5 types of woodland for Guernsey and Lihou (Hayward & Scopes, 2019a)

Habitat	Description	1999- 2018 (ha)	1999- 2018 (%)	2010- 2018 (ha)	2010- 2018 (%)
Semi-Natural Broadleaved Woodland	Historically this habitat has varied due to changing land use. Most woodland was first lost in Guernsey before the Iron Age. Very little current mature woodland pre-dates WWII due to clearance for fuel during the Occupation. There is a lack of species diversity due to these periods of deforestation.	71	54	4	2
Planted Broadleaved Woodland	Planted as part of conservation efforts and for amenity purposes leading to a mixed species composition of native and non-native species.	125	223	73	68
Planted Mixed Woodland	Planted as part of conservation efforts but mostly within large gardens and woodland estates. Conservation planting favours native species over non-native conifers.	55	650	28	80
Plantation Woodland	Mostly consists of orchards or trees planted for agriculture. Usually a monoculture of species. Historically covered a much bigger area, when cider making was a more profitable business.	29	N/A	16	123
Planted Coniferous Woodland	Coniferous woodland does not occur naturally in Guernsey. Most conifers were planted over the last 120 years. Mainly planted with Monterey Pine.	2	9.5	-3	-12

Overall, woodland has increased in Guernsey from 380ha in 2010, to 498ha in 2018 (see Figure 4). This is mainly due to planting schemes and natural succession of scrub. Ultimately though, Guernsey only has about 8% woodland cover, which is lower than the UK average of 13.2 % (Reid et al., 2021). Furthermore, the majority of our woodlands are in poor condition.

This is due to:

- Lack of age diversity
- Presence of non-native species, such as Sycamore (*Acer pseudoplatanus*) and Monterey Pine (*Pinus radiata*)
- Lack of mature trees
- Low species diversity.

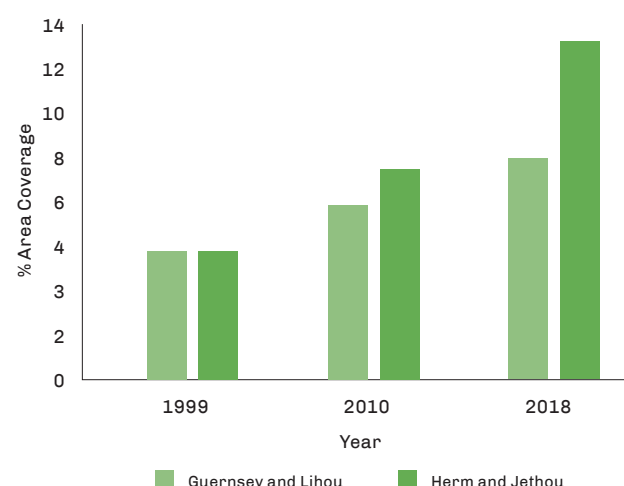


Figure 4 Percentage total area of woodland found in Guernsey and Lihou and Herm and Jethou respectively from 1999-2018 (Hayward & Scopes, 2019a)

³ Figures for Jersey were extracted from protectedplanet.net/en, figures for Isle of Man from the UK State of Nature Report 2023 and figures for Guernsey were from a personal communication with the States of Guernsey.

5.3.2 Associated Native Species:



Bluebells
(*Hyacinthoides non-scripta*)
Zoe Devlin

Bluebells are an early flowering plant found in woodlands and along woodland edges.

They are outcompeted by Three-cornered Garlic (*Allium triquetrum*) which can reproduce much quicker.

5.3.3 Threats

- Invasive non-native species
- Diseases such as Ash Dieback and Dutch Elm Disease
- Lack of appropriate management

See section '7. Drivers of Change' for more information.

5.3.4 Species rich hedges

Species-rich hedgerows are very important as corridors for nature to connect our fragmented habitats. They are used by many animals as habitat and food resources, and have been classed as a Priority Habitat.

This habitat is in decline and has decreased in length by 52% since 1999 (see Figure 5).

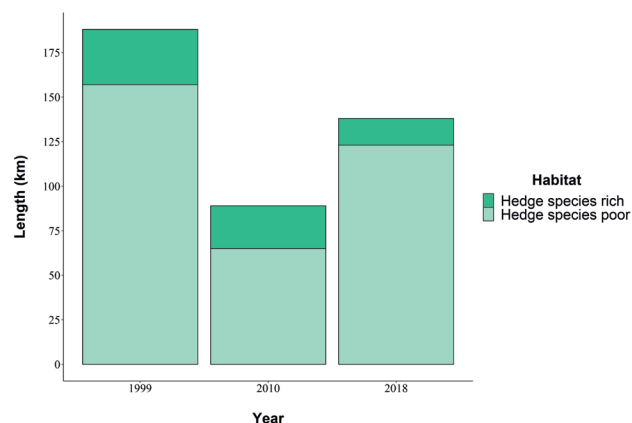


Figure 5 The changes in length of species-poor and species-rich hedges over the 3 years of habitat surveys (Hayward & Scopes, 2019b)

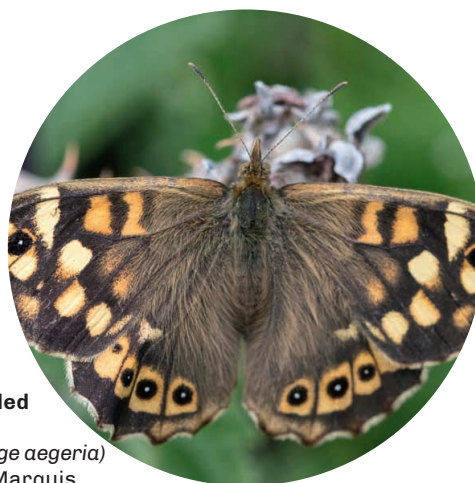
In 12 months over 2022 and 2023, Guernsey Trees for Life planted a total of 1484 native tree and hedge plants. This was made up of 801 hedging plants and 683 trees over 19 separate sites

(A. McCutcheon, personal communication, 2023)

5.3.5 Associated Native Species:



Hawthorn
(*Crataegus monogyna*)
Zoe Devlin



Speckled Wood
(*Pararge aegeria*)
Andy Marquis



Bullfinch
(*Pyrrhula pyrrhula*)
Mike Cunningham

5.3.6 Threats

- Replanting with non-native species
- Replacement with fencing
- Inappropriate management

See section '7. Drivers of Change' for more information.

5.4 State of Freshwater Habitats

Guernsey and Herm's freshwater habitat consists of streams (locally known as douits), ponds, inland wetlands (also known as swamps), and human-made bodies of water in disused quarries and reservoirs. Swamps are a rare habitat supporting many specialist species. The dominant species associated with swamps are reeds, which are important for breeding birds and insects. Le Grand Pré and La Claire Mare are some of the oldest continuous patches of swamp found in Guernsey.

Standing water, such as ponds will support freshwater plants, insects and birds. It is difficult to determine the biodiversity value of this habitat as this varies due to factors such as depth and pollution. Running water habitats are found as natural and human-made streams. Many streams run underground in human-made culverts so have significantly reduced biodiversity value, as the plant species they support cannot tolerate lack of sunlight (Hayward & Scopes, 2019a).

Open drainage ditches, which are classed as running water habitats, create damp areas that support various plants. Regular monitoring takes place to identify pollutants in our water bodies, however monitoring of the ecological condition of these habitats is limited.

Guernsey Water conducts benthic invertebrate monitoring of 23 streams (see section '6.6.1 Benthic Macroinvertebrates'), providing a long-term assessment of water quality in streams, but there are no consistent long-term surveys of freshwater environmental conditions taking place beyond this.

Open water is no longer found in Herm due to the loss of a pond. An area of swamp is present in Herm, where freshwater runoff from the land provides sufficient moisture for reeds to persist.

5.4.1 Associated Native Species:



Little Grebe
(*Tachybaptus ruficollis*)
Andy Marquis



Water Mint
(*Mentha aquatica*)
Zoe Devlin



Tufted Forget-me-not
(*Myosotis axa*)
Zoe Devlin

5.4.2 Threats

- Invasive non-native species
- Drainage and land clearance
- Fertiliser and pesticide run-off
- Scrub encroachment

See section '7. Drivers of Change' for more information.

5.5 State of Coastal Habitats

Guernsey and Herm have a wide range of coastal environments, from cliffs to sand dunes to saltmarsh. Many of these habitats support specialist species that are unable to survive in any other habitat locally.

5.5.1 Coastal Grassland

Coastal grassland is our most florally diverse grassland and classified as a Priority Habitat as many species are found exclusively in these areas. The Near Threatened Black-backed Meadow Ant (*Formica pratensis*) and the Blue-winged Grasshopper (*Oedipoda caerulescens*) are found in this habitat. Coastal grasslands that have persisted in Guernsey have not suffered the same fate as other grasslands; it is considered unsuitable for farming due to thin soils and so it has not been improved for agriculture. Overall, coastal grassland has decreased by 16% since 1999, despite a 32% increase from 1999 to 2010 (Hayward & Scopes, 2019a). This is due to a lack of management leading to succession to scrub, invasion by Sour Fig, and also intensive management (See section '5.5.9 Threats').

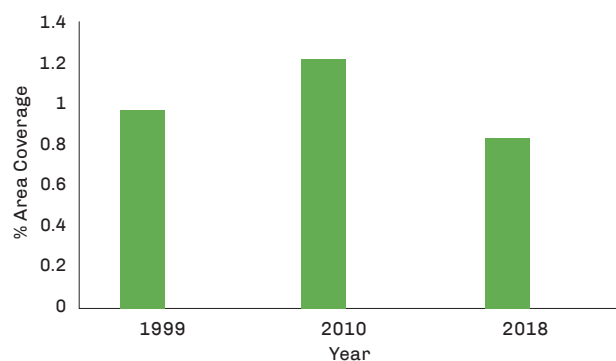


Figure 6 Percentage total area of coastal grassland found in Guernsey from 1999-2018 (Hayward & Scopes, 2019a)

5.5.2 Associated Native Species:



Violet-winged Mining Bee
(*Andrena aglissima*)
Andy Marquis



Blue-winged Grasshopper
(*Oedipoda caerulescens*)
Andy Marquis



Upright Chickweed (*Moenchia erecta*)
Anne Woodington

5.5.3 Coastal Heathland

This habitat is defined by the presence of Heather species such as Ling (*Calluna vulgaris*) and Bell Heather (*Erica cinerea*). Although once widespread, historic declines have been considerable, leaving only a few remaining patches of coastal heathland.

The declines in coastal heathland and fragmentation of the remaining areas have made this habitat more vulnerable. However, in the past 10 years there have been signs that recovery is possible, if land is managed more appropriately. For example, 0.8ha of coastal heathland has been established at Pleinmont due to long-term sensitive management of a former agricultural field by a local NGO (Hayward & Scopes, 2019a). Coastal heathland has seen a slight decline in Herm from 1999 to 2018, due to scrub encroachment (see Figure 7). This has led to its classification as a Priority Habitat. Declines are mostly due to lack of grazing and scrub encroachment (See section '5.5.9 Threats').

Coastal heathland thrives on nutrient-poor soils and therefore nutrient run-off from the land is likely to also have a major impact, encouraging the growth of more vigorous plants (Hayward & Scopes, 2019a) which out-compete heathland specialists.

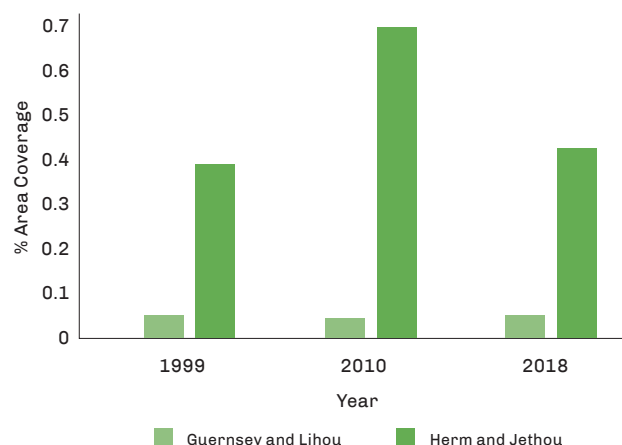


Figure 7 Percentage total area of coastal heathland found in Guernsey and Lihou and Herm and Jethou respectively from 1999-2018 (Hayward & Scopes, 2019a)



Despite its small size, Guernsey has approximately 41 terrestrial habitats, of which over half have been identified as Priority Habitats by the States of Guernsey



Barn Owl
(*Tyto alba*)
Andy Marquis

5.5.4 Associated Native Species:



Bell Heather Flowers
(*Erica cinerea*)
Anne Woodington



Green Tiger Beetle
(*Cicindela campestris*)
Andy Marquis



Land Quillwort
(*Isoetes hystrix*)
Gareth Coleman

5.5.5 Shingle

Shingle banks are a mobile environment where few species can survive, but they support specialist invertebrate and plant species and some key species of breeding seabirds and wading birds (Hayward & Scopes, 2019a). As such they are classed as a Priority Habitat. Vegetated shingle banks in Guernsey have seen historic declines, due to development of sea walls and coastal roads (Hayward & Scopes, 2019a). They will be at risk of further declines in future due to coastal squeeze, as these structures will prevent movement of the habitat with predicted sea level rises (See section '5.5.9 Threats'). The area of shingle has remained relatively stable since 1999, (see Figure 8) and any fluctuations are considered to be due to habitat reclassification rather than declines.

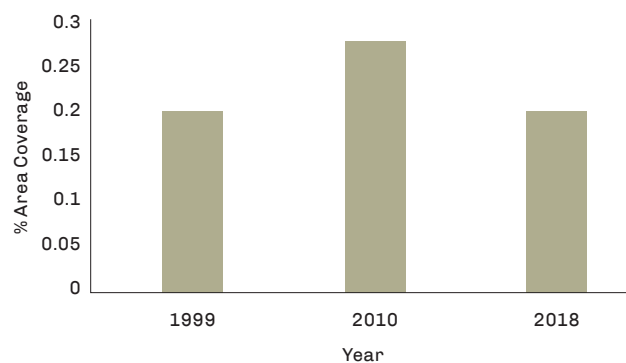


Figure 8 Percentage total area of shingle found in Guernsey from 1999-2018 (Hayward & Scopes, 2019a)

In Herm and Jethou, shingle has decreased by 53% between 2010 and 2018, although the drivers of this are not known. (Hayward & Scopes, 2019a).

5.5.6 Associated Native Species:



Oystercatcher
(*Haematopus ostralegus*)
Andy Marquis



Yellow Horned-poppy
(*Glaucium flavum*)
Julie Davis

5.5.8 Associated Native Species:



Sea Kale
(*Crambe maritima*)
Zoe Devlin



Sea Aster
(*Tripolium pannonicum*)
Zoe Devlin

5.5.7 Saltmarsh

Saltmarsh is a type of coastal wetland that is temporarily flooded by salt water brought in by high tides. This habitat provides a range of ecosystem services such as supporting biodiversity and coastal carbon cycling.

There has been extensive loss of this habitat around Guernsey, at Braye du Valle in 1806, and more recently at Colin Best and Les Salines, culminating in the local extinction of many associated species. Examples include Common Sea-lavender (*Limonium vulgare*) and Marsh Arrowgrass (*Triglochin palustris*). The remaining saltmarsh supports far fewer species than is expected due to these historic extinctions (Hayward & Scopes, 2019a).

Saltmarsh in Guernsey is classed as a Priority Habitat, as 95% of this habitat is only found in 2 areas within Guernsey, covering only 1.3ha (Hayward & Scopes, 2019a). This habitat supports specialist plant species rarely found elsewhere in the island, such as Saltmarsh Goosefoot (*Oxybasis chenopodioides*), Purple Glasswort (*Salicornia ramosissima*) and Common Glasswort (*Salicornia europaea*) (H. Litchfield, personal communication, 2024c).

It is also an important feeding ground for birds (Hayward & Scopes, 2019a). Saltmarsh habitat increased between 1999-2010 due to sympathetic management at sites which allow saltmarsh to develop (see Figure 9). The decrease between 1999-2018 is due to the conversion of saltmarsh to improved grassland and other habitats (see Table 4) (See section '5.5.9 Threats').



Annual Sea-blite
(*Suaeda maritima*)
Zoe Devlin



Curlew
(*Numenius arquata*)
Andy Marquis

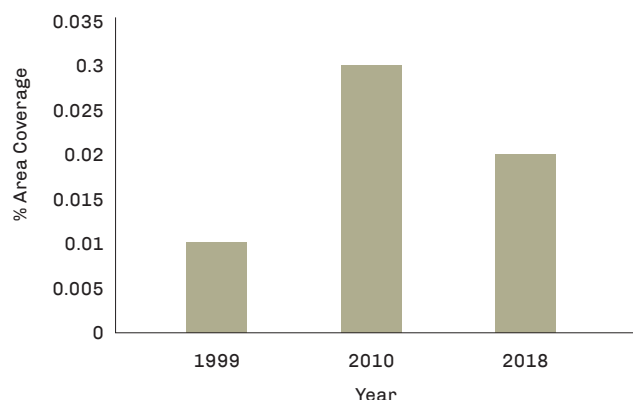


Figure 9 Percentage total area of saltmarsh found in Guernsey from 1999-2018 (Hayward & Scopes, 2019a)

Table 4 The proportional change in area for coastal habitats for Guernsey and Lihou (Hayward & Scopes, 2019a)

Habitat	1999-2018 (ha)	1999-2018 (%)	2010-2018 (ha)	2010-2018 (%)
Coastal Grassland	-10	-16	-24	-32
Coastal Heathland	0.1	3.7	1.1	65
Shingle	0	0	-5	-28
Saltmarsh	0.85	189	-0.5	-28

5.5.9 Threats

- Scrub encroachment
- Inappropriate management
- Invasive non-native species
- Drainage or changes in water regime
- Extreme weather
- Coastal Squeeze

See section '7. Drivers of Change' for more information.

5.5.10 Dune Habitats

There are 5 categories of dune habitats, based on different vegetation on sand dune systems developed over time due to natural succession. They have all been classed as Priority Habitats. Open dune forms when sand accretes and is stabilised by marram grass (*Ammophila arenaria*). This will naturally succeed into dune grassland, heathland or scrub (Hayward & Scopes, 2019a) if there is no erosion and a lack of management intervention. Dune slack occurs in low, sheltered areas between the dunes and is sometimes filled with water. These dune habitats support many plant specialists as well as fungi and invertebrates. Much of our dune habitats have been lost due to human disturbance, improvement for leisure purposes, coastal development, creation of sea walls, sea level rise and coastal squeeze, unsympathetic management and quarrying. Many dune specialists have become locally extinct, including Henbane (*Hyoscyamus niger*) (most recent Guernsey record 1992) and Purple Viper's-bugloss (*Echium plantagineum*) (most recent Guernsey record 1980) (La Société Guernesiaise Botany Section, 2024a).

Open dune is the first stage of sand dune development. Only a few species can survive these harsh conditions. This habitat has decreased overall by 35% since 1999 (see Table 5). Its spread is restricted by the human-made sea defences.

- Dune slack is the most diverse area of the dune system. This habitat has fluctuated with a 55% decrease since 1999 but a 177% increase between 2010-2018.
- Dune grassland has high plant diversity. This habitat has historically declined, with a decrease of 9.5% since 1999. Some new patches have been identified recently.
- Dune heath has returned after being entirely absent in the 2010 Habitat Survey (Hayward & Scopes, 2019a). It is only present in 2 locations at L'Ancrese Common and in Herm, and they are very limited in extent. This is an important habitat for pollinating insects. It has declined by 71% in Guernsey from 1999-2018 (see Table 5).
- Dune scrub provides habitat for nesting birds and small mammals. This habitat has increased overall by 22%, but often at the expense of more diverse dune habitats such as grassland or heathland.

Herm is well known for its sand dune habitat, which has increased overall since 1999 (see Figure 10). Dune slack in Herm has become extinct as of 2018, as the site identified in 1999 has since dried out and the site identified in 2010 has succeeded to scrub.

The loss of the 1999 site has contributed to dune grassland increasing by 9.1% from 1999-2018. Dune heath has remained stable generally, however there has been a small decrease since 2010.

Open dune has decreased by 58% from 1999-2018, due to erosion and scrub encroachment. Dune scrub has increased substantively by 329% and demonstrates why management is key to maintaining other dune habitats which support more specialist species.

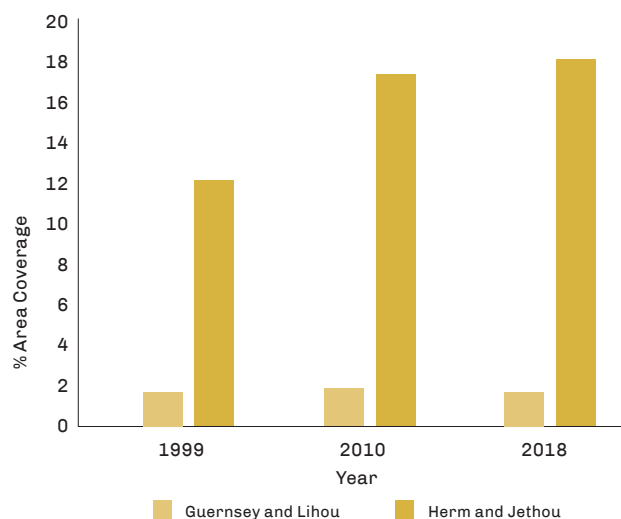


Figure 10 Percentage total area of dune habitats found in Guernsey and Lihou and Herm and Jethou respectively from 1999-2018 (Hayward & Scopes, 2019a)

Table 5 The proportional change in area for dune habitats for Guernsey and Lihou (Hayward & Scopes, 2019a)

Habitat	1999 -2018 (ha)	1999 -2018 (%)	2010 -2018 (ha)	2010 -2018 (%)
Dune Grassland	-7	-9.5	-16	-19
Dune Scrub	6	22	6	22
Dune Slack	-1.6	-55	0.83	177
Open Dune	-0.45	-35	-0.55	-39
Dune Heath	-0.92	-71	0.38	N/A

5.5.11 Associated Native Species:



Bee Orchid
(*Ophrys apifera*)
Zoe Devlin



Cornish Shieldbug
(*Geotomus punctulatus*)
Andy Marquis



Small-flowered Catchfly
(*Silene gallica*)
Anne Woodington

5.5.12 Threats

- Development
- Inappropriate management
- Pollution
- Drainage
- Sea level rise due to climate change
- Invasive non-native species

See section '7. Drivers of Change' for more information.

5.6 State of Marine Habitats

Guernsey and Herm's territorial waters extend to 12 nautical miles (nm), increased from 3 nm in 2019 (States of Guernsey, 2019a), and cover a total area of nearly 700 square miles. Coastal areas within the Bailiwick of Guernsey have been found to support higher marine biodiversity, due to the diversity of habitats present and the habitat complexity they provide (Dunn, 2015; Wood, 2010). Marine habitats are important breeding locations; nurseries for juvenile marine species; food sources for terrestrial species; and also provide ecosystem services, such as reducing storm energy. Our marine area has many different habitats, several of which are considered important on a national and international scale. Marine habitats are not directly protected under local legislation (see Table 6); however, Guernsey is a signatory to several international conventions that relate to the marine environment. Some of these conventions are legally binding and require actions and reporting to be undertaken to demonstrate continued compliance with their requirements. Planning laws provide indirect legal protection for inshore waters, and the Food and Environment Protection Act provides protection for benthic habitats from installations on the sea floor.

2 Ramsar sites have been designated in Guernsey and Herm; the first in 2006 encompassing Lihou Island, La Claire Mare Nature Reserve and L'Erée Aerodrome, with Herm, Jethou and The Humps being the second in 2016. According to the UK 2023 State of Nature Report, only 0.4% of Guernsey's marine biomes are designated as protected (Burns et al., 2023). It is assumed that this value refers only to the 2 designated Ramsar sites. Data is severely lacking in the marine environment of Guernsey and Herm, which may be due to the difficulty in surveying these coastal and offshore locations. Without the appropriate data we cannot make informed decisions, and take the action needed to protect and enhance our marine environment. Despite the essential role that the marine environment plays in preserving life, climate regulation, and supporting biodiversity, only 4% of all biodiversity initiatives globally are in relation to the marine environment (Scalvini & Zollo, 2023).

International Conventions relating to the marine environment which Guernsey is signed up to:

- Bonn Convention
- Agreement of the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS)
- The Convention on Wetlands (Ramsar)
- Convention on Environmental Impact Assessment in a Transboundary Context
- Convention for the Protection of the Marine Environment of the North East Atlantic (OSPAR Convention)

Table 6 The main local legislation that applies to the marine environment and species therein

Legislation	Extent
The Food and Environment Protection Act, 1985 (Guernsey) Order 1987	Installations on the seabed are controlled via licence or exemption under this legislation.
The Fishing Ordinance, 1997	Limits by Order under this Ordinance the landing and minimum size of prescribed species and commercially viable species such as Crawfish and Ormer.
The Land and Planning Development (Guernsey) Law, 2005	Covers the foreshore, land reclaimed from the sea, and islands/islets. Requires an EIA for large coastal developments.
Animal Welfare (Guernsey) Ordinance, 2012	Prevents the known killing, injuring or disturbance of wild animals.
The Environmental Pollution (Water Pollution) Ordinance, 2022	Covers activities which present, or are likely to present, a threat of water pollution both on land and in the territorial waters of Guernsey, Herm and Jethou.

5.6.1 Intertidal

11 intertidal bays have been surveyed to inform Environmental Impact Assessments (EIA) and Ramsar Site objectives by external bodies and the States of Guernsey, with 80 intertidal habitat biotopes identified (Alderney Wildlife Trust, 2022). Most of these are considered to equate to The Habitats Directive Annex I habitats, demonstrating their importance in an international context. 10 intertidal habitats have been classed as Priority Habitats including Eelgrass beds, Maerl beds and littoral mud. The 2018 Habitat Survey looked more specifically at 3 broad intertidal habitat types: shingle, rock and sand. Intertidal shingle is very mobile and only specialised species can survive in this environment. Intertidal sand is classed as an Annex I habitat and is important as it supports sand eels, which is a food source for many seabirds and so provides good foraging habitat for many bird species. Intertidal rocks and boulders are very biodiverse, supporting multiple microhabitats such as lichens on highly exposed rocks, understory boulder fields, rock pools and dense kelp forests, which are only exposed on very low tides.

A large number of species are found within these habitats, including seaweeds, molluscs, sponges, bryozoans, sea-squirrels, fish and crustaceans. At this coarse level, habitat classifications have remained relatively stable (see Figure 11 and Figure 12), however classification to JNCC/EUNIS marine biotopes would enable a more detailed understanding.

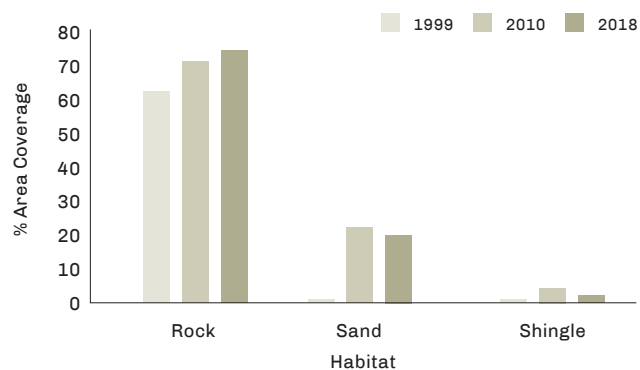


Figure 11 Percentage total area of intertidal habitat found in Guernsey and Lihou from 1999-2018. Note: the south coast cliffs were not looked at in 1999, so data for rock cannot be compared to this year (Hayward & Scopes, 2019a)

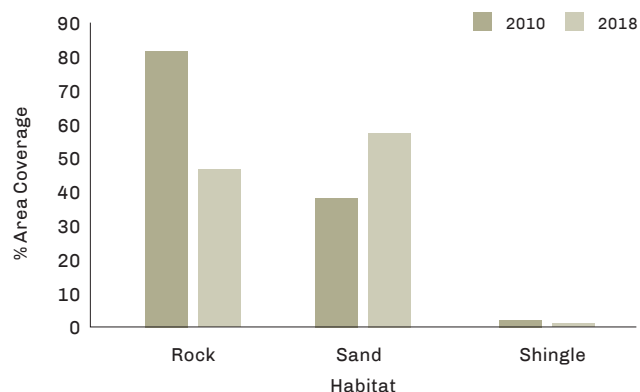


Figure 12 Percentage total area of intertidal habitats found in Herm and Jethou from 2010 and 2018. Note: intertidal habitat in Herm was not surveyed in 1999. (Hayward & Scopes, 2019a)



Dunlin
(*Calidris alpina*)
Andy Marquis

5.6.1.2 Threats

- Invasive non-native species
- Land reclamation and development
- Sea level rise, sea temperature increases, and increased extreme weather events
- Pollution
- Human disturbance

See section '7. Drivers of Change' for more information.

5.6.2 Benthic and Subtidal

Benthic and subtidal habitats include habitat biotopes from soft sediment to hard substrate found below the mean low water mark and which typically support species like marine worms and molluscs. They include gravel, sand, mud, tide-swept reefs, rocky reefs, kelp forests, sponge and filter feeder dominated habitats, and Eelgrass beds. Most are Habitats Directive Annex habitats, demonstrating their value in an international context and overall, 9 benthic habitats have been prioritised in Guernsey. These include Eelgrass and Maerl beds. Maerl beds support many species but are slow-growing, making them very vulnerable to human pressures such as trawling and coastal development. Maerl bed habitat is classed as a UK Biodiversity Action Plan (BAP) habitat of importance, a Guernsey Red Data List habitat, and an OSPAR Commission threatened/declining habitat (Alderney Wildlife Trust, 2022). Infralittoral rock and reef and littoral mixed substrate are other examples of subtidal benthic marine habitats and are listed in the Bern Convention as habitats of importance as they support a diverse range of species. This means these habitats have been recognised internationally for their importance, but Guernsey has not extended membership of the Bern Convention.

5.6.1.1 Associated Native Species:



Turnstone
(*Arenaria interpres*)
Andy Marquis



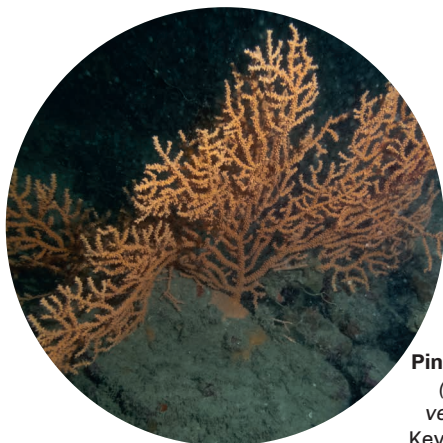
Snakelocks anemone
(*Anemonia viridis*)
Jessi Jennings



⁴ <https://www.coe.int/en/web/bern-convention> and <https://jncc.gov.uk/our-work/bern-convention/#:~:text=It%20is%20a%20binding%20international,continent%20and%20some%20African%20states.>



5.6.2.1 Associated Native Species::



Pink Sea Fan
(*Eunicella verrucosa*)
Kevin Breton

The Pink Sea Fan is a UK BAP habitat/species. It is globally vulnerable.

It is slow-growing and takes a long time to recover. Many are in poor condition due to anthropogenic damage.

Seasearch, a UK marine citizen science project supported by the Marine Conservation Society, implemented in Guernsey and other Channel Islands, has recorded 350 benthic/subtidal species including marine algae, invertebrates and fish (Alderney Wildlife Trust, 2022).

5.6.2.2 Threats

- Damage from anthropogenic activities such as development (including cabling, subsequent smothering), anchoring and fishing
- Ocean acidification and sea temperature rise due to climate change
- Pollution
- Invasive non-native species

See section '7. Drivers of Change' for more information.

5.6.3 Eelgrass Beds

Eelgrass is unique in being a plant found in salt water that produces flowers, seeds and requires sunlight to photosynthesise, like its terrestrial relatives. Eelgrass forms dense meadows, which act as food, shelter and nursery grounds for many species.

High species-richness has been found in areas where Eelgrass is present (Dunn, 2015; Wood, 2010). Eelgrass beds provide ecosystem services such as providing protection to our coast from storms; filtering and cleaning sea water; supporting commercial fish species; and helping to stabilise shorelines. They also capture and sequester carbon, acting as a climate change mitigator. Eelgrass beds, where Eelgrass forms a turf through its rhizomes, are classed as a Priority Habitat (Pinel, 2022). In Guernsey and Herm there are 2 species of Eelgrass present.

Eelgrass provides many ecosystem services, including coastal protection from storms, and is identified as a Priority Habitat





Eelgrass beds seen at low tide in Belle Greve Bay – Tim Harvey

The main species is Common Eelgrass (*Zostera marina*).

Dwarf Eelgrass is found near Herm and Jethou (*Zostera noltii*).

5.6.3.1 Maps of Eelgrass Habitats

The Bailiwick Eelgrass Exploration Project (BEEP) aims to record the presence and distribution of our Eelgrass beds through citizen science. Maps have been produced of our Eelgrass beds (see Figure 13 and Figure 14). Overall coverage is spread out around Guernsey, with notable exceptions on the south coast. This may be due to the lack of suitably sheltered bays on the south coast, however, it may also reflect the difficulty of access to survey those areas. Further surveys of this area could help to indicate if these gaps in the data are down to absence or inaccessibility. Revisiting historical areas will also help determine if these areas are still present. This is one of the main aims of BEEP, with volunteers regularly targeting bays where historic records exist. If not, giving Eelgrass the chance to spread could lead to restoration of Eelgrass habitats where it was previously found, similar to the many restoration projects which are taking place across the British Isles.

Key:

Green = verified Eelgrass sightings

Yellow = absence

Red = areas for further investigation

Blue = historical, verified sightings

Purple = points submitted to the 'savvy navy' app

5.6.3.2 Threats

- Disturbance
- Climate change
- Pollution (including freshwater run-off)
- Coastal development
- Invasive non-native species

See section '7. Drivers of Change' for more information.

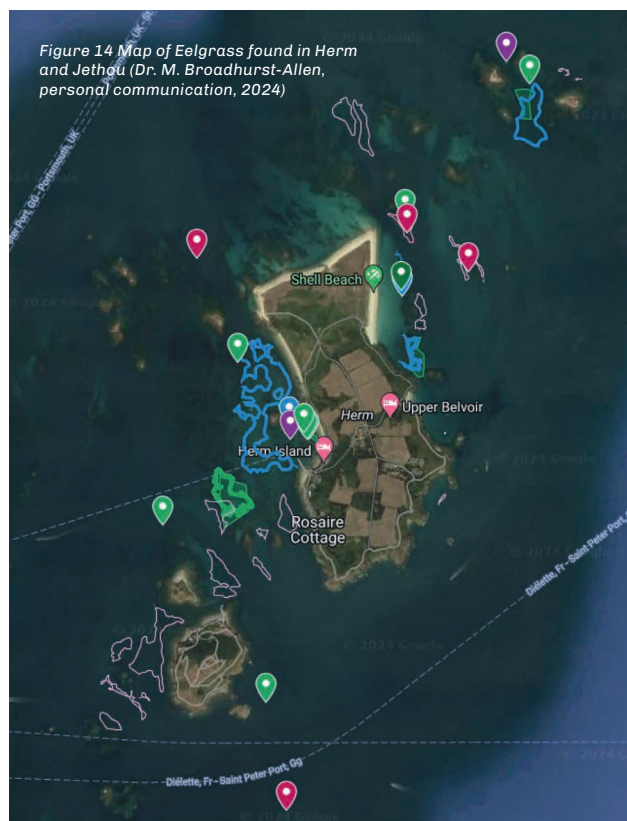
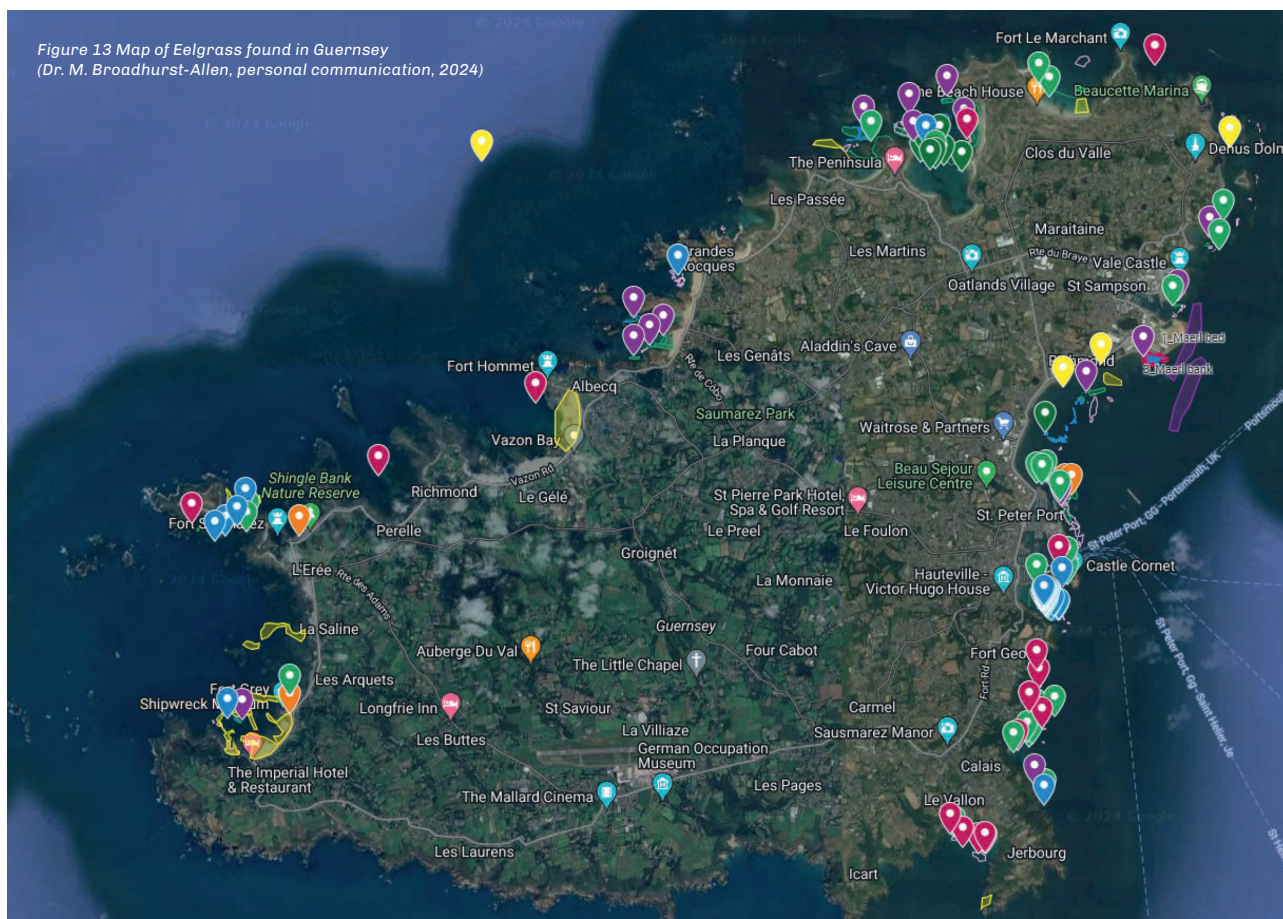


Figure 14 Map of Eelgrass found in Herm and Jethou (Dr. M. Broadhurst-Allen, personal communication, 2024)

5.6.4 Seaweeds

Seaweeds are macroalgae that are divided into three groups according to their pigmentation – brown, red and green (Bunker et al., 2017). Brown seaweeds are found in cold, coastal waters and usually attach to a rocky substrate, with examples including kelp. Red seaweeds are found on rocky seashores, exposed at low tides, such as Dulse (*Palmaria palmata*). Green seaweeds are also found on rocky shores, and an example is the commonly found Sea Lettuce (*Ulva* sp.).

Figure 13 Map of Eelgrass found in Guernsey
(Dr. M. Broadhurst-Allen, personal communication, 2024)



Zonation of seaweeds due to their tolerance of submersion and level of pigmentation absorption creates different intertidal habitats found on the lower, middle and upper shore (Bunker et al., 2017). As primary producers, these seaweed dominated habitat zones provide opportunities for many different species to utilise. Seaweeds provide shelter and food for many marine species including juvenile fish species; are used by humans as a food source and for cosmetics and medicines; and help to protect our coasts from wave and storm damage. Seaweed debris is also an important upper shore habitat, providing sources of food and shelter, and providing nutrients as the seaweed breaks down. Seaweed is of cultural importance in Guernsey and Herm, with 'vraic' (local term for seaweed) collected for its nutrients. The Red

Data Book for Guernsey lists 214 species of seaweed being found around Lihou causeway alone (Gilmour & David, 2020), indicating the diversity in Guernsey's coastline.

The Big Seaweed Search is a citizen science project that looks for 14 target species of seaweed, including invasive non-native species and species that are indicators of ocean acidification (see Table 7). Surveys have been conducted in Guernsey in previous years, however the Nature Commission leads this work as of 2024 (Guernsey Nature Commission, 2024). If more data is collected about our seaweed species and seasonal variations, any changes over time can be better understood and effective management and mitigation actions can be better applied where possible to address the issues indicated by this project.

Table 7 UK Great Britain Red List of Big Seaweed Search Species (Brodie et al., 2023)

Species Name	Common Name	UK Red List Classification
<i>Alaria esculenta</i>	Dabberlocks	Endangered
<i>Ascophyllum nodosum</i>	Knotted/Egg Wrack	Least Concern
<i>Fucus serratus</i>	Serrated Wrack	Least Concern
<i>Fucus spiralis</i>	Spiral Wrack	Least Concern
<i>Fucus vesiculosus</i>	Bladder Wrack	Least Concern
<i>Himanthalia elongata</i>	Thongweed	Least Concern
<i>Pelvetia canaliculata</i>	Channelled Wrack	Near Threatened
<i>Saccharina latissima</i>	Sugar Kelp	Least Concern

Green = Least Concern, Yellow = Near Threatened, Red = Endangered

5.6.4.1 Kelp Forests

Kelp forests are important habitats and are present around Guernsey and Herm. They are found in rocky areas in sandy bays and on underwater structures. Cuvie Kelp (*Laminaria hyperborea*) forest with foliose red seaweeds and a diverse fauna on tide-swept upper littoral rocks is a States of Guernsey Priority Habitat.

Typical species of kelp present around the coasts of Guernsey and Herm include Cuvie Kelp (*Laminaria hyperborea*), Oarweed (*Laminaria digitata*), Golden Kelp (*Laminaria ochroleuca*) and Furbelows (*Saccorhiza polyschides*). Kelp forests support a diverse range of species, including Anglerfish (*Lophius piscatorius*), Jewel Anemones (*Corynactis viridis*), Spider Crabs and Blue-rayed Limpet (*Patella pellucida*), and provide shelter and foraging habitat for many others.

Kelp forests provide numerous ecosystem services which help our coasts adapt to and mitigate climate change, such as carbon storage and sequestration and protection from storm events by absorbing wave energy. Seaweeds generally, including kelp, also absorb pollutants in coastal waters which will help combat effects of nutrient run-off into the sea (U. N Environment, 2023). Protecting our kelp forests provides a nature-based mitigation to climate change impacts.

5.6.4.2 Threats

- Increased sea temperatures and ocean acidification due to climate change
- Invasive non-native species
- Pollution
- Coastal development
- Disturbance

See section '7. Drivers of Change' for more information.

5.6.5 Pelagic

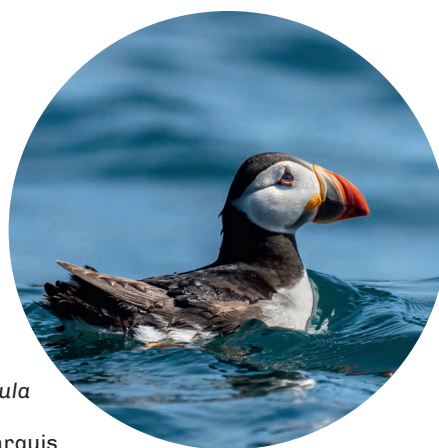
These habitats consist of open water, which can be described as the water column, occupied by floating and suspended organisms or plankton (OSPAR Commission, 2023). These species occupy the lower tier of the food chain and are the main source of food for many marine species. Environmental conditions will change dependent on water depth; light and temperature changes, and pressure increases the further the distance from the surface. This causes changes in salinity and amount of dissolved oxygen; consequently, species must adapt to survive these conditions. While there have been some surveys on pelagic species, information on the state of our pelagic habitats is limited (Alderney Wildlife Trust, 2022). These areas of open water are difficult to survey and require a higher level of effort and resources. Data is really important for pelagic habitats; many species use Channel Island waters and cooperation will be needed for conservation measures.

Examples of wildlife found in pelagic zones include plankton, commercially important fish species, cetaceans, other marine mammals, and seabirds. Some fish and marine mammals present in Guernsey and Herm's marine environment are classed as globally important species, under the ASCOBANS legislation. Since 2019, DolFin, a local citizen science project, has collated over 300 Bottlenose Dolphin (*Tursiops truncatus*) sightings in our waters (See 6.7.2 Cetaceans). It is not yet clear whether sightings of dolphins have increased because of increased data collection effort rather than more dolphins present in our waters, or if increases are due to actual changes in the populations. Further information would be needed in order to determine this.

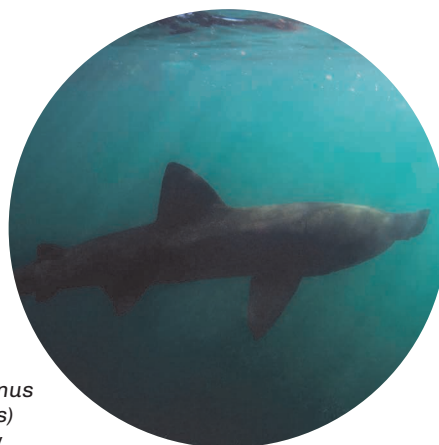
5.6.5.1 Associated Native Species:



Gannet
(*Morus bassanus*)
Mike Cunningham



Puffin
(*Fratercula arctica*)
Andy Marquis



Basking Shark
(*Cetorhinus maximus*)
Sue Daly

5.6.5.2 Threats

- Damage from anthropogenic activities such as fishing
- Pollution
- Invasive non-native species
- Offshore development
- Ocean acidification and sea temperature rise due to climate change.

See section '7. Drivers of Change' for more information.



Areas of open water are difficult to survey as they require a higher level of effort and resource; as such, information on the state of our pelagic habitats is limited

Algal forest
Tim Harvey

Heath Spotted Orchid
(*Dactylorhiza maculata*)
Anne Woodington



**The state of
our species
is constantly
changing due
to species
immigration,
colonisation,
emigration,
local extinctions,
and other
drivers
of change**



6. State of Species

Understanding the state of our species is not easy. Some species groups have been very well-studied, such as birds. There are several long-running surveys for birds, such as the Wader Count which has been going since the 1970s. This has allowed analysis of population trends, showing if species are increasing, stable or declining.

In other areas such as fungi and lichen, the data is severely lacking. Our marine environment is also lacking in data, which means we do not truly understand what marine species use our waters. The state of species is constantly changing, with immigration, colonisation, emigration and local extinction happening regularly. Being placed in between England and France allows many different species to migrate via the islands; new species can be discovered all the time, from tiny millipedes to birds or bats. Species like the exotic Long-tailed Blue Butterfly (*Lampides boeticus*) are making more regular appearances in Guernsey as a result of climate change extending their range. Guernsey is also at the northern edge of the range for many species which are not found in the UK, such as the Green Ormer (*Haliotis tuberculata*). This section aims to quantify the known species information as of 2023, with trend data where possible.

6.1 Terrestrial Mammals

There are 19 known terrestrial mammals found in Guernsey and Herm, of which 12 are bat species. These mammals, excluding the bat species, are listed in Table 8. Our largest mammals are the European Rabbit (*Oryctolagus cuniculus*) which are a good source of prey especially for raptors (birds of prey), and the West European Hedgehog (*Erinaceus europaeus*), likely brought to Guernsey sometime in the 19th century, around the 1840s/1850s (Le Marquand,

2017). Guernsey has a subspecies of the Common Vole (*Microtus arvalis*) called the Guernsey Vole (*Microtus arvalis sarnius*), which is endemic to Guernsey and as such is considered a Priority Species. The Greater White-toothed Shrew (*Crocidura russula*) is found in Guernsey, Herm and Alderney, and has recently been found in mainland Britain for the first time (The Mammal Society, 2024). A 2018 study suggested small mammals may be struggling in Guernsey, as populations have reduced densities compared to UK populations (Scopes, 2018). However, this theory has yet to be confirmed. Raptors rely on mammals as prey species, so it is anticipated that reduced small mammal densities would affect raptor populations. The only island-wide, small mammal survey was undertaken in 2018 and was able to provide initial population estimates for Guernsey Vole, Greater White-toothed Shrew and Wood Mouse (*Apodemus sylvaticus*) (Scopes, 2018). A repeat survey has not yet been undertaken however there have been smaller, site-based surveys across several locations in Guernsey. The Bailiwick Bat Survey records presence and distribution of some small terrestrial mammals which produce noise that can be picked up on bat detectors, but there is no information available yet to estimate population health or trends. More research is needed to ascertain the current status of our small mammals. A monitoring plan is being drafted for the Guernsey Vole, which is likely to recommend periodic island-wide surveying to better understand population trends.

Table 8 Origin of Terrestrial Mammals (excluding bats) found in Guernsey and Herm and their Great Britain Red List status (Harrower & Mathews, 2020)

Species Name	Common Name	Origin in Guernsey and Herm	Great Britain Red List Status
<i>Apodemus sylvaticus</i>	Wood Mouse	Presumed native	Least Concern
<i>Crocidura russula</i>	Greater White-toothed Shrew	Presumed native	Not included on list
<i>Erinaceus europaeus</i>	West European Hedgehog	Non-native	Vulnerable
<i>Microtus arvalis sarnius</i>	Guernsey Vole	Native, endemic	Not included on list*
<i>Mus musculus</i>	House Mouse	Non-native	Not Assessed
<i>Oryctolagus cuniculus</i>	European Rabbit	Non-native	Not Assessed
<i>Rattus norvegicus</i>	Brown Rat	Non-native	Not Assessed

Green = Least Concern, Yellow = Near Threatened, Orange = Vulnerable

*Another subspecies of the Common Vole, the Orkney Vole (*Microtus arvalis orcadensis*) is listed as Vulnerable on the Great Britain Red List (Harrower & Mathews, 2020)

6.1.1 Small Mammal Research

Research in 2018 (Hayward, 2018) found:

Guernsey Voles are bigger than mainland voles

Herm's shrews are bigger in body size and weight than UK and Guernsey shrews

Wood Mice are bigger too. They have changes in pelage colour compared to UK mice

Evidence suggests the Guernsey Voles are bigger due to island gigantism, where animals isolated on an island grow bigger than their mainland counterparts. This could be due to differing selection pressures such as fewer large predators, but more evidence is needed (Hayward, 2018). Lack of predators may also explain why Herm shrews are bigger. There are no known mammalian predators or small carnivores in Herm, so shrews can grow bigger without any cost to their survival. Changes in pelage (fur/hair) colour are commonly seen on islands. Wood Mice found in Guernsey and Herm have a vivid brown pelage or a large ochre patch on their chest, which are much brighter compared to mainland populations, but it is not yet fully understood why (Hayward, 2018). The pelage colour could be consistent with the Yellow-necked Mouse (*Apodemus flavicollis*) found in the UK, but genetic analysis found Channel Island mice are grouped with Wood Mouse (*A. sylvaticus*) (Hayward, 2018).

Additional small mammal research estimated population sizes for the Guernsey Vole, Wood Mouse and Greater White-toothed Shrew in Guernsey (Scopes, 2018):

**150,510
VOLES**

**206,829
WOOD MICE**

**27,295
SHREWS**

This study found that the estimated home ranges of Wood Mouse and Vole in Guernsey are bigger than UK and continental species, possibly due to less resource availability (Scopes, 2018). This could be a sign of population declines or a struggling population. More monitoring of our small mammals is needed. A suggested approach would be to conduct annual surveys to monitor presence/absence and a more intensive population count every five years. In addition, a longer study throughout the year would detect seasonal population change.

6.1.2 Hedgehogs

While they are an introduced species in Guernsey, Hedgehogs are classed as vulnerable in Great Britain. A 2020 citizen science research project reported 464 and 489 individual hedgehogs sighted by 201 participants on two evenings (S. Kirby, personal communication, 2024). The number of Hedgehogs being taken to the Guernsey Society for the Prevention of Cruelty to Animals (GSPCA) has steadily increased from 2013, peaking in 2020 (see Figure 15). These figures from the GSPCA are not a true measure of population levels, so are limited in their usefulness as an indicator. Since 2011, 5727 Hedgehogs have been brought to the GSPCA.

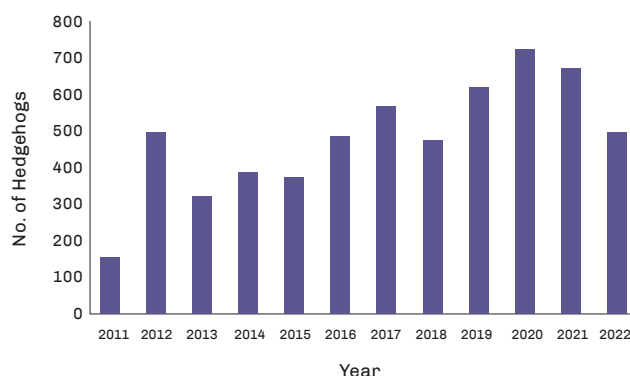


Figure 15 Number of Hedgehogs taken care of by the GSPCA per year (Byrne, 2023)

6.1.3 Bats

Our knowledge of the bat species present on Guernsey and Herm has increased significantly. In recent years, the launch of the Bailiwick Bat Survey (BBS) has seen the confirmation of 13 bat species present in the Bailiwick (see Table 9). EUROBATS, an international treaty set up under the Bonn Convention, places an obligation on members to protect bats. EUROBATS specifically aims to protect bats through monitoring, legislation, education, conservation measures and international cooperation. The UK extended their agreement to the Bailiwick of Guernsey with effect from June 1999.

Bat Timeline

1908 'Pipistrelle' and 'Long-eared' Bats were recorded as 'very common' in Guernsey. Greater Horseshoe Bat was also recorded as 'not uncommon'

1989 when La Société Guernesiaise Bat Section was formed, 2 resident species were officially thought to occur - Common Pipistrelle Bat and Grey Long-eared Bat

1989-1999 Nathusius' Pipistrelle Bat, Brown Long-eared Bat and Greater Horseshoe Bat were confirmed

2003 Kuhl's Pipistrelle Bat confirmed

2018 Kuhl's Pipistrelle Bat confirmed breeding. Natterer's Bat are widespread. Single Greater Horseshoe Bat caught

2021 Leisler's Bat, Lesser Horseshoe Bat, Brandt's/Whiskered Bat, Serotine Bat and Common Noctule confirmed

(Newson, et al., 2022; Newson et al., 2023; Sinel, 1908)

Our 3 most common Bats



Common Pipistrelle (*Pipistrellus pipistrellus*) is the most common bat in the Bailiwick (see Table 10). Over 95% of the bats recorded in the BBS in 2021 (Bailiwick Bat Survey, 2024) were of this species and it was recorded at 99% of sites surveyed in 2023 (Newson et al., 2024).



Grey Long-eared Bat (*Plecotus austriacus*) is the second most common bat, recorded at 77% of sites in 2023 (Newson et al., 2024). It is listed as Endangered on the Great Britain Red List and Least Concern on the Brittany and Normandy Red Lists (Groupe Mammalogique Breton, 2016; Groupe Mammalogique Normand, 2022).



Natterer's Bat (*Myotis nattereri*) is the third most common bat found in the Bailiwick, recorded at 59% of sites surveyed in 2023 (Newson et al., 2024). It is listed as Near Threatened on the Brittany Red List and Least Concern on the Normandy Red List (Groupe Mammalogique Breton, 2016; Groupe Mammalogique Normand, 2022).

Photos: Daniel Hargreaves



Table 9 Red List Status of Baitwick Bat species in Great Britain and France (Groupe Mammalogique Normand, 2022; Harrower & Mathews, 2020)

Species name	Common Name	Status in Guernsey and Herm	Great Britain Red List Status	Normandy Red List Status*
<i>Eptesicus serotinus</i>	Serotine Bat	Possible migrant	Vulnerable	Least Concern
<i>Myotis brandtii</i> **	Brandt's Bat	Possible rare resident	Data Deficient	Not Evaluated
<i>Myotis mystacinus</i> **	Whiskered Bat	Possible rare resident	Data Deficient	Least Concern
<i>Myotis nattereri</i>	Natterer's Bat	Resident /Breeding	Least Concern	Least Concern
<i>Nyctalus leisleri</i>	Leisler's Bat	Rare but regular migrant	Near Threatened	Near Threatened
<i>Nyctalus noctula</i>	Noctule Bat	Very rare migrant	Least Concern	Vulnerable
<i>Pipistrellus kuhlii</i>	Kuhl's Pipistrelle	Resident /Breeding	Not included on list	Least Concern
<i>Pipistrellus nathusii</i>	Nathusius' Pipistrelle	Migrant/rare resident. Potential breeding as juvenile trapped	Near Threatened	Near Threatened
<i>Pipistrellus pipistrellus</i>	Common Pipistrelle	Resident /Breeding	Least Concern	Least Concern
<i>Plecotus auritus</i>	Brown Long-eared Bat	Resident /Breeding	Least Concern	Least Concern
<i>Plecotus austriacus</i>	Grey Long-eared Bat	Resident /Breeding	Endangered	Least Concern
<i>Rhinolophus ferrumequinum</i>	Greater Horseshoe Bat	Rare resident	Least Concern	Least Concern
<i>Rhinolophus hipposideros</i>	Lesser Horseshoe Bat	Rare	Least Concern	Least Concern

Green = Least Concern, Yellow = Near Threatened, Orange = Vulnerable, Red = Endangered

*French regional status for Normandy has been included however there are Red Lists available for other regions and for France as a whole.

** Acoustic recordings collected from the BBS confirmed that either Whiskered or Brandt's Bats were on-island but were unable to ascertain which species was present from just these recordings. It was necessary to have a bat 'in-hand' to enable a review of the distinguishing features between these two species. On 18th August 2024, a Whiskered Bat was captured by experts from Sangan Island Conservation conducting advanced licence bat survey techniques in Guernsey, at a site which was known to have good numbers of acoustic call files. This is the first in-hand record for the Channel Islands, finally confirming that it is Whiskered Bat present on-island. (A. Hall, personal communication, 2024)

Table 10 Comparison of Baitwick bat data from 2021, 2022, 2023* (Newson, et al., 2022; Newson et al., 2021, 2024)

Species	Number of Recordings		
	2021	2022	2023
Greater Horseshoe Bat	25	221	425
Lesser Horseshoe Bat	2	5	11
Whiskered/Brandt's Bat	10	210	387
Natterer's Bat	6,040 (Social = 18)	4,553 (Social = 35)	18,162 (Social = 954)
Serotine Bat	84	7	22
Leisler's Bat	22	22	36
Common Noctule	11	9	8
Common Pipistrelle	665,271	824,898	787,915
Soprano Pipistrelle (Alderney only)		10	7
Nathusius/Kuhl's Pipistrelle	17,379 (Kuhl Social calls = 424, Nathusius = 123)	16,045 (Kuhl Social = 2,421, Nathusius = 4)	19,407 (Kuhl Social = 1236, Nathusius = 69)
Brown Long-eared Bat	313	327	370
Grey Long-eared Bat	20,538	23,359	14,651

* Includes data from the whole Baitwick

The Bailiwick Bat Survey has provided information on bat activity in spring, summer and autumn in the islands, however this survey does not cover the winter period. Extra surveys have been conducted outside of the Bailiwick Bat Survey to try and understand where bat species are roosting over winter, as winter roosts are poorly known for most species. Surveys of some of Guernsey's underground tunnels have recorded Brown Long-eared Bat, Natterer's Bat, Whiskered/Brandt's Bat and Greater Horseshoe Bat: these species are rare in the main bat survey but show a strong 'preference' for overwintering in the tunnels and are known to like underground structures. Knowing where bats are roosting means we can protect those areas and prevent disturbance. Grey Long-eared Bat, Common Pipistrelle Bat and Kuhl's/Nathusius Pipistrelle Bats were under recorded in these surveys, fitting in with prior knowledge of each species' ecology and their preference for winter roosts, usually in buildings. Further research will provide more evidence on where species hibernate in winter, and if they migrate to Guernsey or leave the island to overwinter.

Robust legislation is needed to ensure the long-term survival of our bat roosts. Repeated disturbance will cause many species to abandon the roost. Above ground roosts for some species include houses, such as in lofts and attics. There is some anecdotal evidence that roosts have been lost. The Animal Welfare (Guernsey) Ordinance 2012 requires that bats and their roosts are protected, with reckless or deliberate acts that cause disturbance, damage or killing being an offence. The law requires that reasonable precautions are taken to prevent disturbance which is likely to impact roosts, but it is not routine practice for surveys to be carried out before demolition or structural works, nor for the Planning Department to require them. Some species will also roost in trees, and the presence of standing mature/dead trees provide habitat for these tree dwellers.

Following the validation of the 2021, 2022 & 2023 results of the Bailiwick Bat Survey confirming the presence of the 13 bat species in the islands, there is a clear need to evaluate the habitat associations of bats to understand more about their habitat preferences, roosting areas and behaviour. This will enable better management and protection to help conserve the bat species within the Bailiwick as well as meeting the EUROBATS requirements.

6.1.4 Threats

- Habitat loss (especially of roosts) and fragmentation
- Pesticide usage
- Disturbance
- Light pollution
- Invasive non-native species
- Intensive land management

See section '7. Drivers of Change' for more information.

6.2 Amphibians and Reptiles

In Guernsey and Herm, 2 species of amphibians are found: Smooth Newt and Common Frog which are both considered native (see Table 11). There are also 2 species of reptiles: Slow Worm, which is thought to be in long-term decline and Western Green Lizard. Western Green Lizards have a self-sustaining population in the wild in a single limited location, on the south-east coast. It is thought that Agile Frog (*Rana dalmatina*) used to be found in Guernsey but there are only a few records from the 1960s and 70s and it is now considered locally extinct.

Amphibians and reptiles, known collectively as herptiles, are found in ponds, wet areas, grasslands, woodlands, scrub, gardens and hedgerows. These species feed on aquatic and terrestrial invertebrates and hibernate during the winter months.

Table 11 Conservation status of reptiles and amphibians found in Guernsey (Foster et al., 2021)

Species Name	Common Name	Great Britain Red List Status
<i>Anguis fragilis</i>	Slow Worm	Least Concern
<i>Lacerta bilineata</i>	Western Green Lizard	Not Included
<i>Lissotriton vulgaris</i>	Smooth Newt	Least Concern
<i>Rana temporaria</i>	Common Frog	Least Concern

Green = Least Concern, Purple = Not Included

6.2.1 Data

There is a lack of data on amphibians and reptiles in Guernsey and Herm, and further work is needed to better understand their distribution.

- The National Amphibian and Reptile Recording Scheme (NARRS) was conducted in Guernsey from 2012-2017. This scheme involved sampling suitable habitat in a square kilometre in Guernsey by visiting 3 times and recording presence or absence of local herptile species. Results from these surveys found:
 - **Common Frog** – 20 adults, 17 immature, 310+ tadpoles and 282 clumps of frogspawn
 - **Slow Worm** – 35 adults and 24 immature, juvenile and sub-adults
 - **Smooth Newt** – 99 adults, and 33 immature
 - **Western Green Lizard** – 2 adults

(J. Lihou & T. Walls, personal communication, 2016)

A long-running, consistent amphibian and reptile survey would provide reliable data that could be used to estimate population trends. This should be tailored to Guernsey and Herm, as the requirement of sampling habitat per square kilometre seen in the national scheme is not appropriate for small islands. This will increase our knowledge and will inform as to whether conservation measures are necessary.

6.2.2 Threats

- Habitat loss and degradation
- Pesticide usage
- Invasive non-native species
- Disease
- Increased environmental temperatures due to climate change

See section '7. Drivers of Change' for more information.

6.3 Insects

Insects are a really important component of ecosystems, being prey for many other species and delivering ecosystem services such as pollination or decomposition in addition to their intrinsic value. While some of our insects have been relatively well-studied, such as the butterflies and moths, other areas are lacking in data. Many insects require a unique interest in order to obtain in-depth study. We are slowly starting to understand more and more about our insects, thanks to our specialists who dedicate so much of their time. This has led to discoveries in recent years of species new to Guernsey and Herm, the Channel Islands, and even the UK and Europe.



Globally, 40% of insect species are threatened with extinction (van der Sluijs, 2020) due to factors such as increased pesticide usage, habitat loss, climate change, invasive species, and light pollution. Insect loss is a huge concern for humans as they are also vital for food production, with $\frac{1}{3}$ of human-grown crop types requiring insect pollination (Goulson, n.d.).

6.3.1 Moths

Moths are an important component of terrestrial ecosystems as they are a food source for many other animals. Most moth species fly at night, but some species are day-flying. There are 1,337 moth species found in Guernsey and Herm, as of 2021 (La Société Guernesaise, 2021); these are made up of macro and micro moth species. Many moth species are migratory, and regular trapping has seen new species added to the Guernsey and Herm list.

There are 5 moth species on the Guernsey Priority Species List. They are:

- Orange-spot Tansy (*Dichrorampha flavidorsana*)
- Silver-barred Sable (*Pyrausta cingulata*)
- Scarce Purple and Gold (*Pyrausta ostrinalis*)
- Dusky Scalloped Oak (*Crocallis dardoinaria*)
- Bordered Grey (*Selidosema brunnearia*)

There are some unique species in Guernsey and Herm which are rarely found in mainland UK.

Species Spotlight:

GUERNSEY UNDERWING (*Polyphaenis sericata*)

Found in 19th century, rediscovered 1986.

Larvae feed on Honeysuckle and Oak.

CHANNEL ISLANDS PUG (*Eupithecia ultimaria*)

Found in Guernsey in 1984.

Larvae feed on Tamarisk.

Coastal habitats.

Recently colonising Britain.

SOUTHERN GRASS EMERALD (*Chlorissa cloraria*)

Found in 1862. Coastal grassland

(mostly south coast).

Vulnerable IUCN Red List Status.

6.3.1.1 Rothamsted Moth Trap Data

The Rothamsted Insect Survey has been running a moth trap in Guernsey since around 1971. This is part of a nationwide network of light traps across the UK. For the first 2 years, the trap was at Le Friquet and then moved to the Burnt Lane site in 1973 where it has remained since. 375 species were caught in the trap between 1971 and 2009. Catches at the site have been fairly stable since the late 1980s (see Figure 16) having dropped to around 1500 macro moths per year from a high of double that in the early 1970s (the site move in 1973 may have affected the number of moths caught) (Rothamsted Insect Survey, 2023). The number of species caught ranges from about 110 to 170 per year (see Figure 17). The notable dip in 2005 is because the trap was out of action for much of the year due to building works. A Shannon Diversity Index conducted on the data, found a range from 2 to around 4.2. This index helps to estimate the diversity of a species within a community, using the number of species living in the habitat (richness) and their relative abundance (evenness). The higher the index, the more diverse the species are in the habitat (see Figure 18). A value of 0, would mean the community only had 1 species present and therefore there was no diversity. By comparing these figures to other Rothamsted traps, such as the Jersey trap, it would

potentially help determine the quality of habitat needed to support a diverse community of moth species.

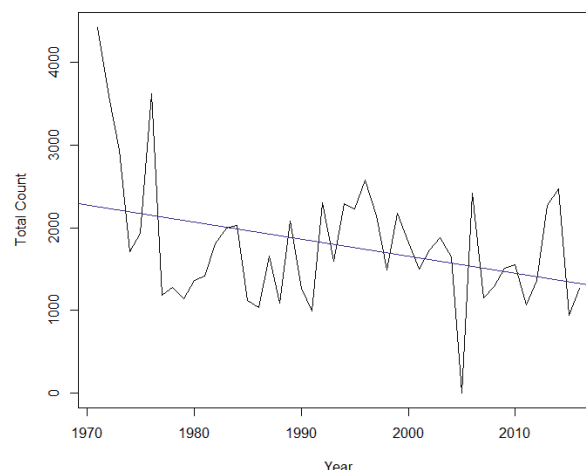


Figure 16 Total annual counts for macro moth species in the Guernsey trap 1971-2016 (Rothamsted Insect Survey, 2023)

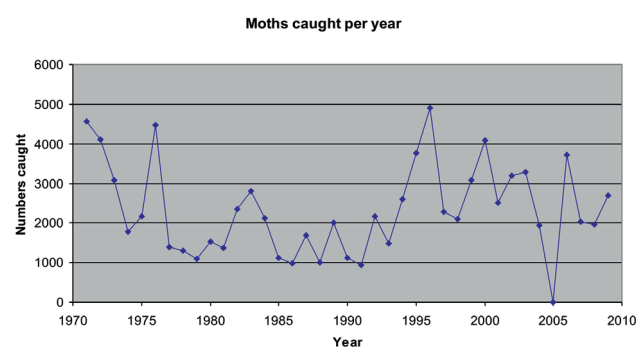


Figure 17 Number of macro moths caught per year (GBRC, personal communication, 2023)

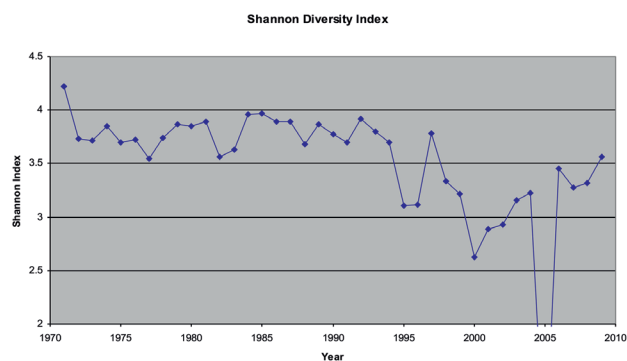


Figure 18 Shannon Diversity Index on macro moth counts (GBRC, personal communication, 2023)

Species doing well:

2 species that have increased in recent years are the Pinion-streaked Snout (*Schrankia costaestrigalis*) and the Least Carpet (*Idaea rusticata*). Although the Pinion was not recorded before 1996, it is now commonly found in moth traps, preferring wet meadows and marshy areas. The Least Carpet was found in low numbers in the 1970/80s then increased steadily during the 1990s and 2000s (see Figure 19). It seems to have stabilised in recent years. The Least Carpet is found in gardens and grassland. Larval foodplants include Ivy (*Hedera spp.*) and Traveller's Joy (*Clematis vitalba*).

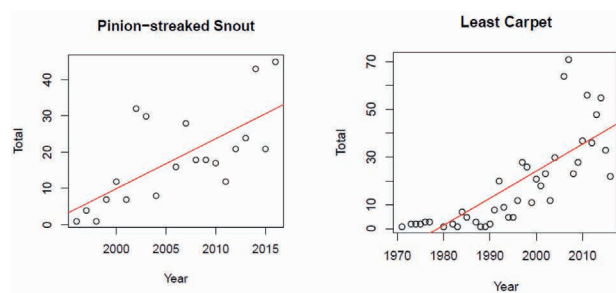


Figure 19 Examples of increasing species found in the Rothamsted trap (Rothamsted Insect Survey, 2023)

Species declining:

The general trend for the Early Thorn (*Selenia dentaria*) and the Feathered Ranunculus (*Polymixis lichenea*) shows a decrease over the years (see Figure 20). Early Thorn had some good years in mid 1980s and early 1990s but struggled to get above 20 per year since 2000. This moth is quite generalist, being found in woodland, scrub, hedges and gardens, with larvae feeding on deciduous trees. The decline in the Feathered Ranunculus reflects the 'overall pattern of total moths of an early decline followed by stabilisation' (Rothamsted Insect Survey, 2023). This moth is found in coastal areas on shingle beaches, and its larvae feed on a variety of plants such as Red Valerian (*Centranthus ruber*) and Stonecrop (*Sedum spp.*).

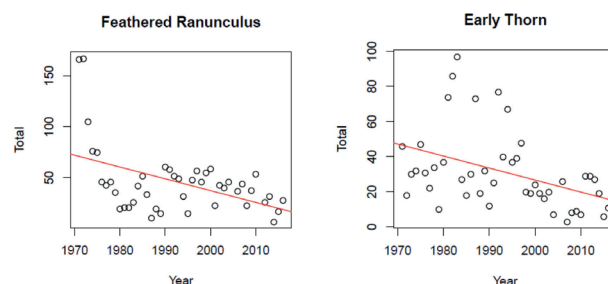


Figure 20 Examples of species undergoing a general decline found in the Rothamsted trap (Rothamsted Insect Survey, 2023)

6.3.1.2 Threats

- Habitat loss and degradation
- Invasive non-native species
- Increased temperatures and rainfall due to climate change
- Light pollution
- Pesticide usage

See section '7. Drivers of Change' for more information.

6.3.2 Butterflies

Butterflies are well-studied with considerable information known about the presence, location and ecology of various species. However, there are no long-term trend data studies as yet. In the UK, changes to the timing of seasonal temperatures due to climate change is causing the emergence of butterflies earlier and later in the year. This may also be seen in Guernsey and Herm. There are 20 species of butterfly found in Guernsey and Herm (see Table 12) and another 10 migrant species have also been found. Some of these migrants may become resident as a changing climate sees conditions more similar to their home environment become prevalent, allowing for their establishment. Butterflies are found in most terrestrial habitats in Guernsey, although some species are more specialist in their habitat preference. Butterflies are good environmental indicators due to their short life cycle and quick response to environmental changes. For example, differences in numbers between 2022 compared to the previous two years is likely due to the dry summer of 2022 which contributed to lower numbers (see Figure 21) (A. Smith, personal communication, 2023).

The UK Butterfly Monitoring Scheme will be implemented in Guernsey over the next few years by the Guernsey Nature Commission, with the cooperation and assistance of the Butterfly Conservation County Recorder. This will collect data from transect walks on different sites and will tell us more about the state of our butterflies. Additionally, targeted surveying by local experts helps us to understand more about specialist butterflies and their habitat requirements.





Table 12 List of butterflies present in Guernsey and Herm and their Great Britain Red List Status (Fox, n.d.)

Resident Species	Common Name	Status in Guernsey and Herm	Great Britain Red List Status
<i>Aglais io</i>	Peacock	Declined in recent years	Least Concern
<i>Aglais urticae</i>	Small Tortoiseshell	Risk of extinction due to lack of sightings in recent years	Least Concern
<i>Aricia agestis</i>	Brown Argus	Increased in recent years	Least Concern
<i>Callophrys rubi</i>	Green Hairstreak	Declined in recent years - at risk	Least Concern
<i>Celastrina argiolus</i>	Holly Blue	Stable	Least Concern
<i>Coenonympha pamphilus</i>	Small Heath (Herm)	At risk	Vulnerable
<i>Favonius quercus</i>	Purple Hairstreak	Stable (slight increase from 2022)	Least Concern
<i>Hipparchia semele</i>	Grayling	Declined in recent years	Endangered
<i>Lasiommata megera</i>	Wall	Stable (slight decline from 2022)	Endangered
<i>Lycaena phlaeas</i>	Small Copper	Stable	Least Concern
<i>Maniola jurtina</i>	Meadow Brown	Stable (slight increase from 2022)	Least Concern
<i>Melitaea cinxia</i>	Glanville Fritillary	At risk	Endangered
<i>Pararge aegeria</i>	Speckled Wood	Increasing	Least Concern
<i>Pieris brassicae</i>	Large White	Stable (slight increase from 2022).	Least Concern
<i>Pieris napi</i>	Green-veined White	Stable	Least Concern
<i>Pieris rapae</i>	Small White	Stable (slight increase from 2022)	Least Concern
<i>Polygonia c-album</i>	Comma	Stable (slight increase from 2022)	Least Concern
<i>Polyommatus icarus</i>	Common Blue	Stable	Least Concern
<i>Pyronia tithonus</i>	Gatekeeper	Stable	Least Concern
<i>Vanessa atalanta</i>	Red Admiral	Increasing	Least Concern
Migrant Species			
<i>Anthocharis cardamines</i>	Orange-tip	1 or 2 records in the last few years.	Least Concern
<i>Colias croceus</i>	Clouded Yellow	Few records annually.	Least Concern
<i>Gonepteryx rhamni</i>	Brimstone	Few records annually.	Least Concern
<i>Lampides boeticus</i>	Long-tailed Blue	More regular sightings in recent years.	Not Included
<i>Nymphalis polychloros</i>	Large Tortoiseshell	Increasing.	Regionally Extinct
<i>Papilio machaon</i>	Swallowtail	Few records annually.	Vulnerable
<i>Vanessa cardui</i>	Painted Lady	N/A	Least Concern

Green = Least Concern, Orange = Vulnerable, Red = Endangered, Grey = Regionally Extinct, Purple = Not Included

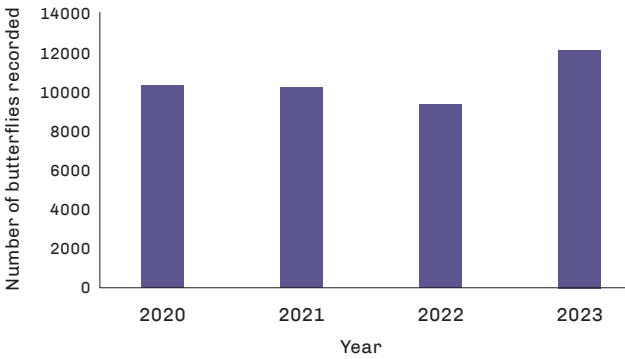


Figure 21 Data on total number of resident butterflies recorded from local experts and recorders between 2020 and 2023 (A. Smith, personal communication, 2023, personal communication, 2024a)

Species Spotlight: GLANVILLE FRITILLARY



Glanville Fritillary
Andy Marquis

Guernsey's only fritillary species.
Endangered (GB Red List) (see Figure 22)
Extinct in Jersey and Sark
Found on coastal grasslands on south coast cliffs
Caterpillars eat Ribwort Plantain (see Figure 23)

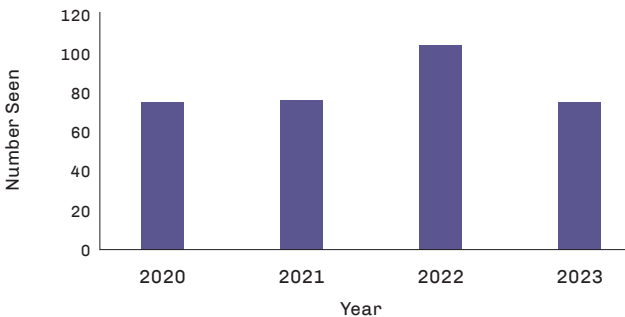


Figure 22 Sightings of adult Glanville Fritillaries that have been recorded from local hotspots 2020-2023 (A. Smith, personal communication, 2023, personal communication, 2024a))

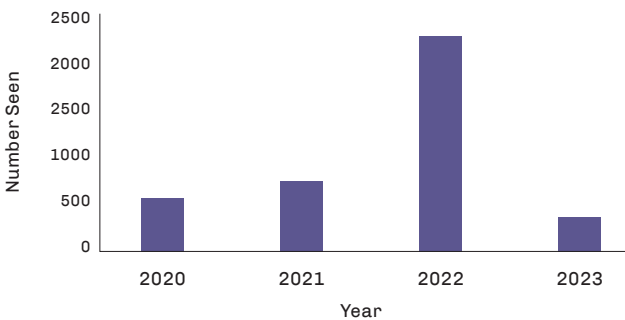


Figure 23 A rough estimate of the larvae that have been counted at known Glanville Fritillary hotspots 2020-2023 (A. Smith, personal communication, 2023, personal communication, 2024a)

6.3.2.1 Threats

- Habitat loss and degradation
- Invasive non-native species (linked with habitat loss)
- Increased temperatures due to climate change
- Pesticide usage

See section '7. Drivers of Change' for more information.

6.3.3 Crickets and Grasshoppers

Guernsey has 5 Priority Species of cricket and grasshopper, collectively known as Orthoptera (see Table 13). The Bailiwick Bat Survey has helped to establish information on Bush-crickets through acoustic surveying, with many species spreading northwards due to climate change. Guernsey is home to the Blue-winged Grasshopper (*Oedipoda caerulescens*), which is not found on mainland Britain, and the Scaly Cricket (*Pseudomogoplistes vicentae*) which has a very limited distribution. Monitoring of these species involves shingle surveys with pitfall traps and butterfly transect methodology for species such as the Blue-winged Grasshopper. The Bailiwick Bat Survey is currently monitoring presence of Bush-crickets as a by-product of the acoustic monitoring, which can also detect Orthoptera calls.

6.3.3.1 Scaly Crickets

The Scaly Cricket was first discovered in the Channel Islands at Dixcart Bay, Sark in 1998 (La Société Guernesiaise, 2019). Before this, it was only known to occur in Chesil Bank in Dorset where it had been since the 1940s. A colony was also found at Granville, France, in 1998 (Sutton, 1999). Today, it is only known to be found at 3 sites in the UK. The Scaly Cricket is listed as Vulnerable on the IUCN Red List and is a Priority Species in Guernsey. This cricket lives in shingle banks, lays its eggs in driftwood, and feeds on organic detritus on shingle banks. There are 12 known sites in Guernsey with populations of this species of cricket. It was first found in Herm in 2019 and in Alderney in 2020.

167 found in June 2018 (La Société Guernesiaise, 2019)

85 found at the Lihou BioBlitz, September 2021 (GBRC, 2021a)

Spur Point supports the second highest density on-island, with 297 found in 11 pitfall traps (Vahed, n.d.)

6.3.3.2 Threats to Scaly Crickets

- Habitat loss and degradation
- Rising sea levels due to climate change
- Development
- Pollution

See section '7. Drivers of Change' for more information.



6.3.3.3 Grasshoppers and other Crickets

Table 13 Orthoptera status in Guernsey and Herm (Newson, et al., 2022; Newson et al., 2023) (A. Smith, personal communication, 2024b)

Species Name*	Common name*	Status	Habitat
<i>Conocephalus dorsalis</i>	Short-winged Conehead	2 locations identified in 2021	Coastal saltmarshes, sand dunes and maritime grasses.
<i>Conocephalus fuscus</i>	Long-winged Conehead	Widespread. Expanding north from south coast UK.	Long grasses in wet places near the sea. Damp and coastal habitats.
<i>Gryllotalpa gryllotalpa</i>	Mole Cricket	Rare	Deep, loose, damp soil. Wet areas. Feeds on vegetable material and insect larvae.
<i>Leptophyes punctatissima</i>	Speckled Bush-cricket	Widespread	Woodlands, hedgerows, scrub and gardens. Found on low vegetation.
<i>Oedipoda caerulescens</i>	Blue-winged Grasshopper	63 counted in 2023**	Coastal sand dunes, south-facing cliffs, stony fields. Found along the cliff paths.
<i>Platycleis albopunctata</i>	Grey Bush-cricket	Data Deficient	Favours coastal areas. South coast cliffs as warm and sunny. Some found inland, low-lying areas.
<i>Ruspolia nitidula</i>	Large Conehead	Continental species spreading north. New to islands in 2021 and Herm in 2022. Probably become more widespread.	Wet habitats with long grass.
<i>Tetrix ceperoi</i>	Cepero's Groundhopper	Data Deficient	Open, sunny areas. Coastal sites, sand dunes, dune slacks, shingle banks. Near saltmarsh and ponds. Low vegetation for egg-laying.
<i>Tettigonia viridissima</i>	Great Green Bush-cricket	Widespread	Trees, grassland and scrub. Light, dry soil for egg-laying.

*Crickets/grasshoppers in blue have been assessed as a Priority Species

**Figure obtained from a single data source and as such it is likely that more were recorded



Speckled Bush-cricket
Andy Marquis

is one of the largest orders of insects, with many species classed as important pollinators (Royal Entomological Society, 2024). They play an important role in food production for human consumption through pollination of crops. While we have a good idea of most of the species which are present in Guernsey and Herm, there are likely to be species unrecorded (both historical residents and new arrivals) and there is little long-term data available. Pollinators are being lost in Britain (Powney et al., 2019) and it is likely that similar declines are happening in Guernsey and Herm.

An 8-year study began in 2020 assessing pollinator abundance and distribution across the Channel Islands (Guernsey, Jersey, Alderney and Sark) and the impacts of pesticide use⁵. The data gathered should provide a clearer picture of the state of local Hymenopteran populations.

6.3.3.4 Threats to Orthoptera

- Habitat loss and degradation
- Inappropriate land management
- Development
- Pesticide usage

See section '7. Drivers of Change' for more information.

6.3.4 Hymenoptera

Hymenoptera includes bees, wasps, ants and sawflies. This

6.3.4.1 Black-backed Meadow Ant

Guernsey and Jersey are the only places the Black-backed Meadow Ant is found in the British Isles. It is extinct in mainland UK, with the last record from England being in 1988 (Natural England, 2010). This species of ant is classified as Near Threatened on the IUCN Red List (Social Insects Specialist Group, 1996). It requires permanent grassland and heathland habitats, and so is an indicator species for the condition of these environments. In Guernsey, the ant is mainly found along the south coast cliffs, between Pleinmont and Moulin Huet and in field banks close to the cliffs, with 1

⁵This work is being delivered by the University of Bristol and British Trust for Ornithology (BTO) in partnership with the Guernsey Pollinator Project, Jersey Pollinator Project, the Alderney Wildlife Trust, La Société Sercquaise and many local volunteers.

nest site located on Lihou Headland and 1 solitary nest in a lane in St. Saviour's. The nests need a lot of sunshine; some well-established nests can measure a metre across and can have a lifespan of at least 20 years. Each of these nests may have a population of around 60,000 ants. This ant has seen some overall declines across its range. Since the 1990s there has been a 42% decline in the Black-backed Meadow Ant population (see Figure 24) (GBRC, 2024). Declines in Black-backed Meadow Ants are due to shading of nest sites, increased rainfall and the spread of Sour Fig. Nest numbers seem to be relatively stable over the period from 2017 to 2021, with a slight increase in nests found. However, numbers are approximate as nests can be easily overlooked one year and refound the next (Natural History of the Bailiwick of Guernsey, 2021).

Individual ant nests are marked with red flags, to mark them when the cliff paths are strimmed and to help check population numbers. Vegetation is also cut around the nests to keep them exposed to sunlight. This approach seems to be successful, with 20 additional nests recorded in 2019 (Foote, 2020).

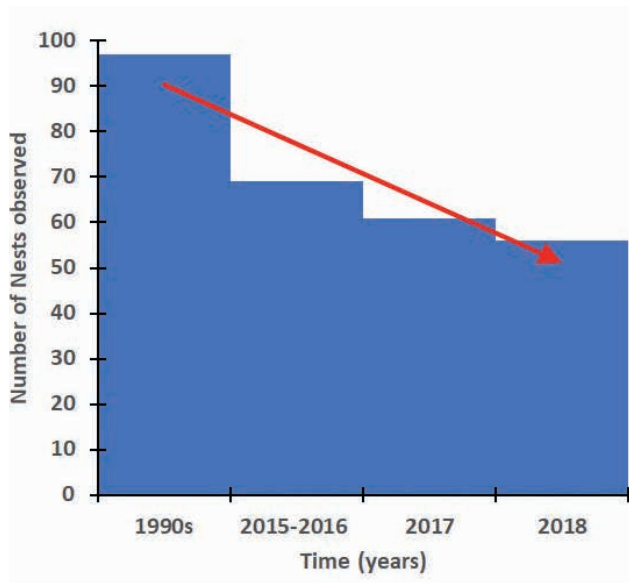


Figure 24 Number of Black-backed Meadow Ant nests recorded since the 1990s (Guernsey Biological Records Centre, 2024)



Black-backed Meadow Ants
Andy Marquis

6.3.4.2 Threats

- Habitat loss and degradation
- Invasive non-native species (linked with habitat loss)
- Increased rainfall due to climate change

See section '7. Drivers of Change' for more information.

6.3.4.3 Bees

For several years, there has been growing concern about declines in our insects and pollinators, including bees which are an important pollinator species. In Guernsey and Herm there are 90 known species of bee – 6 bumblebees (including 1 cuckoo bumblebee), 83 solitary bees and the Western (European) Honeybee (*Apis mellifera*) (which are a non-native farmed species). 92% of our bees are solitary bees which are split into groups: Flower bees, Leafcutter bees, Mason bees, Mourning bees, Pantaloon bees and Wool Carder bees.

There are currently no long-term data trends available for our bees. However, as part of the 8-year pollinator study, DNA samples of Buff-tailed Bumblebee (*Bombus terrestris*) and Common Carder Bee (*Bombus pascuorum*) are being collected to determine colony abundance, distribution and survival rates.

Bees are found nesting and foraging in many habitats including:

- Coastal grassland
- Gardens and parks
- Farmland
- Wildflower meadows
- Bare ground/sand
- Hedgerows and earth banks
- Woodland
- Cliffs

Species Spotlight:

GOLD-FRINGED MASON BEE (*Osmia aurulenta*)



Gold-fringed Mason Bee
Owen Beckett

The Gold-fringed Mason Bee is critically endangered in Guernsey (Gilmour & David, 2020).

It needs open fixed sand dune grassland and nests in snail shells.

Threats include loss of habitat due to erosion and scrub encroachment.

The Large Shaggy Bee (*Panurgus banksianus*), Small Shaggy Bee (*Panurgus calcaratus*) and Potter Flower Bee (*Anthophora retusa*) have been added to the States of Guernsey's Priority Species List. Large Shaggy Bee was last recorded at the GBRC in 2017 and Small Shaggy Bee was recorded by a local expert, in 2019. These species are uncommon in the Channel Islands, with only a handful of records (Ransom, 2019). The Potter Flower Bee was last recorded in 2017, with only 6 records in total (J. Davis, personal communication, 2024). Targeted surveys will help

Photo: Andy Marquis



discover the population size and distribution of this species and help determine if conservation measures are needed.

Bumblr is a citizen science project created by the Guernsey Pollinator Project, that records sightings of the six bumblebee species. In 2020, 5866 bumblebees were recorded with Buff-tailed Bumblebees the highest number recorded (see Figure 25). Habitats included pollinator patches, coastal grassland, gardens, grazed farmland, arable farmland, parkland and woodland. Sightings were seen from May through to September.

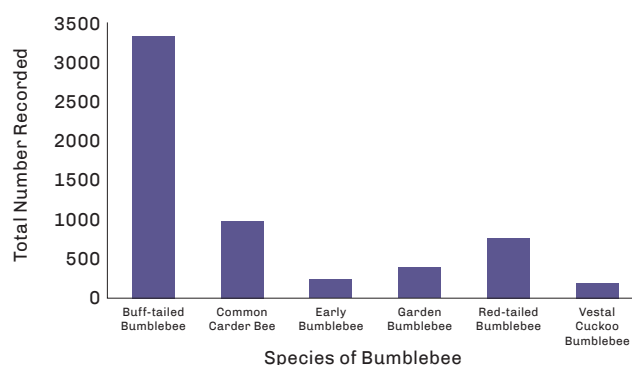


Figure 25 Sightings of the 6 bumblebee species in Guernsey in 2020 recorded in the Bumblr app (GBRC, 2023a)

6.3.4.4 Threats

- Pesticide usage
- Habitat loss and fragmentation
- Climate change

See section '7. Drivers of Change' for more information.

6.3.5 Dragonflies and Damselflies

Dragonflies and damselflies are predatory flying insects referred to as Odonata. 15 species of dragonfly and damselfly used to be seen regularly in Guernsey but more recently this has reduced to around 6 species.

Some of these dragonflies and damselflies appear to have become locally extinct, which means that they are no longer present in Guernsey, while some are former breeders that may still be found on-island (see Table 14).

Dragonflies and damselflies are an important part of the food web, controlling pest species and providing food for birds such as warblers and flycatchers.

Key habitats for Odonata species include ponds and streams, refer to section 5.4 State of Freshwater Habitats for more information.

6.3.5.1 Current Species

Table 14 List of Dragonflies and Damselflies currently found in Guernsey and their Great Britain Red List Status (Daguet et al., 2008) (T. Bourgaize, personal communication, 2023a)

Species Name	Common Name	Status in Guernsey and Herm	Great Britain Red List Status	Habitat Requirements
<i>Aeshna mixta</i>	Migrant Hawker	Migrant (probably now breeds).	Least Concern	Well-vegetated standing and slow flowing water. Found along hedgerows, grassland and woodland edges. Hunts away from breeding ponds.
<i>Anax imperator</i>	Emperor Dragonfly	Resident (some vagrants due to drought in southern Europe).	Least Concern	Large, well-vegetated ponds and lakes. Also, slow flowing waters. Rarely found away from water.
<i>Coenagrion puella</i>	Azure Damselfly	Former breeder	Least Concern	Still water and floating emergent vegetation.
<i>Ischnura elegans</i>	Blue-tailed Damselfly	Resident	Least Concern	Almost any water bodies with emergent vegetation. Brackish waters. Some toleration of polluted waters.
<i>Orthetrum cancellatum</i>	Black-tailed Skimmer	Resident	Least Concern	Lakes, ponds and slow flowing streams. Areas of open water. Bare patches of gravel and mud along the edge of water bodies.
<i>Sympetrum fonscolombii</i>	Red-veined Darter	Migrant	Least Concern	Shallow standing water with submerged aquatic vegetation.
<i>Sympetrum striolatum</i>	Common Darter	Resident (doing well)	Least Concern	Still, stagnant and brackish waters, mainly seen in ponds. Can be found well away from water.

Green = Least Concern, Yellow = Near Threatened, Orange = Vulnerable, Red = Endangered

Black-tailed Skimmer
Andy Marquis





6.3.5.2 Species that have been lost

5 species of our dragonflies and damselflies are no longer present in Guernsey (see Table 15) (Daguet et al., 2008). 2 species are likely to be vagrants rather than have gone extinct, meaning that they were not established here. Another 5 species have bred in the past but may still be

seen in Guernsey. The Four-spotted Chaser (*Libellula quadrimaculata*) was thought to be extinct, until records for this species were re-found at the GBRC.

However, there appear to be no recent or reliable records over the last 10 years. An increase in suitable habitat could see some of these Odonata species breed again.

Table 15 Dragonflies/Damselflies gone extinct/former breeders and their Great Britain Red List Status (Daguet et al., 2008) (T. Bourgaize, personal communication, 2023a) (J. Davis, personal communication, 2024b) (A. Smith, personal communication, 2024b)

Species Name	Common Name	Status in Guernsey and Herm	Great Britain Red List Status	Habitat Requirements
<i>Aeshna cyanea</i>	Southern Hawker	Vagrant	Least Concern	Well-vegetated still water. Hunts well away from water.
<i>Brachyton pratense</i>	Hairy Hawker	Vagrant	Least Concern	Still and slow-moving water, unpolluted and well-vegetated water bodies.
<i>Calopteryx virgo</i>	Beautiful Demoiselle	Former breeder	Least Concern	Streams and rivers with sandy or gravel beds.
<i>Coenagrion pulchellum</i>	Variable Damselfly	Extinct	Near Threatened	Well-vegetated still water.
<i>Coenagrion scitulum</i>	Dainty Damselfly	Extinct	Regionally Extinct (found only in Kent)	Open and well-vegetated waters, can tolerate some salinity.
<i>Cordulegaster boltonii</i>	Golden-ringed Dragonfly	Extinct	Least Concern	Acidic running water with sandy or gravel beds.
<i>Enallagma cyathigerum</i> *	Common Blue Damselfly	Former breeder. (7 were recorded at La Grande Mare in 2023)	Least Concern	Still and slow-moving water, open water.
<i>Erythromma viridulum</i>	Small Red-eyed Damselfly	Former breeder	Not Evaluated (Recent colonist – last 10 years)	Still and slow-moving water, floating vegetation.
<i>Libellula quadrimaculata</i>	Four-spotted Chaser	Uncertain (One recent record 8.8.17)	Least Concern	Edges of shallow ponds and lakes with emergent and submerged vegetation. Also needs open water. Rapidly colonises new sites.
<i>Orthetrum coerulescens</i>	Keeled Skimmer	Extinct	Least Concern	Pools and streams in wet heathland, peat bogs.
<i>Pyrrosoma nymphula</i>	Large Red Damselfly	Former breeder	Least Concern	Still and slow-moving water, floating vegetation.
<i>Sympetrum flaveolum</i>	Yellow-winged Darter	Extinct	Least Concern	Marginal vegetation in shallow ponds and slow flowing waters.

*Priority Species Green = Least Concern, Yellow = Near Threatened, Grey = Regionally Extinct

6.3.5.3 Threats

- Habitat loss and degradation
- Pesticide usage
- Increased droughts due to climate change
- Invasive non-native species
- Pollution

See section '7. Drivers of Change' for more information.

6.3.5.4 Potential Non-native Arrivals

It is likely that Guernsey will see some non-native species appearing with increasing air temperatures. Some species of dragonfly are already starting to spread here from the Continent (T. Bourgaize, personal communication, 2023a).

Lesser Emperor (*Anax parthenope*) is an annual migrant to England, but sightings are becoming more common. There has been some scattered breeding with the first proved in Cornwall in 1999 (British Dragonfly Society, 2024). A recent record from a Guernsey expert identified an individual in 2019 (T. Bourgaize, personal communication, 2023b).

Southern Migrant Hawker (*Aeshna affinis*) has been found breeding in the Thames Estuary since 2010 (Taylor et al., 2021). Sightings of migrants are increasing in Britain, especially around the south-east coast.

Southern Emerald Damselfly (*Lestes barbarus*) was first recorded in Britain in 2002 (Taylor et al., 2021). It has colonised a few sites south and east of England. There has been some breeding in England, and it has also been seen in Jersey (Parr & Long, 2015).

Willow Emerald Damselfly (*Chalcolestes viridis*) is a recent colonist in England and rapidly expanding its range. Some have been seen in Jersey (Parr & Long, 2015). A recent sighting in Guernsey was in October 2022, at Le Grand Pré. This is the first record since 2003 (J. Davis, personal communication, 2023).



6.3.6 Non-insects

In addition to insects, there are many other species of invertebrate found in Guernsey and Herm, with some requiring specialist identification, the study of which has led to many new discoveries in Guernsey and the Channel Islands (see Table 16). This has also seen the discovery of invasive non-native species (see Table 17). Eradication of these species is currently viewed as impractical in most cases and it remains to be seen what impact they will have.

Cozyptila blackwalli

Very rare and endangered spider. Known from only 2 sites in the UK. Found under stones and in short, coastal grassland.

Chaetophiloscia cellaria

Priority Species woodlouse. Only found on 4 sites in Guernsey out of the British Isles. Recent colonist. Found in leaf litter and under stones on the upper shoreline of shingle and pebble beaches.

Thalassiosobates littoralis

Priority Species millipede. Nationally rare in UK. Maritime habitats. Found on strandline of shingle beaches.

Chaetophiloscia cellaria
Andy Marquis



Pachymerium ferrugineum (long form)
Andy Marquis

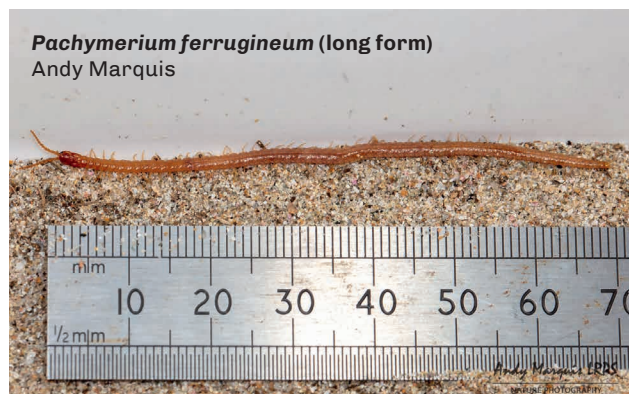




Table 16 Extract of the New Invertebrate Species Discoveries (GBRC, 2023d)

Species Name	Common Name	Date	Status in Guernsey and Herm	Habitat
<i>Cyphostethus tristriatus</i>	Juniper Shieldbug	2016	New to Guernsey. 1 site and only 1 ever seen. Range expanding in UK.	Needs Juniper or Cypress trees
<i>Monobella grassei</i>	Springtail	2018	New to Guernsey. Rare. Very common in UK.	St Saviour's Reservoir and Les Cotils. Found in leaf litter and rotting wood.
<i>Pachymerium ferrugineum</i> (long form)	Centipede	2019	New to Guernsey/Channel Islands/UK. Nationally rare in Great Britain. Long form first discovered in Channel Islands.	Beaucette, Grandes Havre and Lihou headland. Shingle dwelling. Found above storm drift line, within shingle or below driftwood.
<i>Pseudeuophrys obsoleta</i>	Spider	2021	New to Guernsey/ Channel Islands Rare. Restricted to shingle beaches in south-east England. UK BAP Priority Species.	Port Soif dunes. Found in tide litter, empty whelk shells and in the open on shingle.

Table 17 New Invasive Non-native Invertebrate Species Discoveries (GBRC, 2023d)

Species Name	Common Name	Date	Status in Guernsey and Herm	Habitat
<i>Anamastigona pulchella</i>	Millipede	2022	New to Guernsey/ Channel Islands.	Le Foulon.
<i>Apterothrips apteris</i>	Thrips	2022	New to Guernsey/ Channel Islands.	St Johns, Bordeaux and L'islet Commo.
<i>Brachyiulus bagnalli</i>	Millipede	2022	New to Guernsey/ Channel Islands/UK.	Chateau des Marais (Ivy Castle).
<i>Dicranopalpus larvatus</i>	Harvestman	2019	New to Guernsey/Channel Islands. New arrival to Britain. Rapidly expanding.	Widespread.
<i>Ophiulus germanicus</i>	Millipede	2020	New to Guernsey/Channel Islands. 2022 widespread in Isle of Man.	Widespread.
<i>Polydesmus taranus</i>	Millipede	2022	New to Guernsey/Channel Islands. Very rare. First found Cornwall 2021, Guernsey 2022 and Isle of Man 2023.	

6.3.6.1 Threats

- Habitat loss and degradation
- Development
- Inappropriate management
- Climate change

See section '7. Drivers of Change' for more information.

Guernsey and Herm support nationally and internationally important seabird populations, with >300 species of bird found here



Photo: Andy Marquis



6.4 Birds

The birds of Guernsey and Herm are one of the most well-studied species groups. As of 2022, there are 333 birds listed on the Guernsey Birds List (Lawlor, 2022). They are very popular among wildlife enthusiasts, and as such there is a wealth of data available. There are several long-running surveys, such as the Wader Count run by the British Trust for Ornithology (BTO) which was established in the 1970s. This data has shown that many of our wader species are undergoing long-term declines. Guernsey and Herm are valuable for breeding seabirds as these areas support nationally and internationally important populations. The islands are also on a migratory route between the UK and Europe, meaning rare bird species and those you would not expect to see sometimes make an appearance. The Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) and Raptors MOU (Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia) are extended to Guernsey through the UK membership. These agreements, formed under the Bonn Convention, aim to protect species and habitats, promote research and monitoring, and raise awareness. This section provides an overview of some of the available data but does not provide a comprehensive list of all available bird data for Guernsey and Herm. The Red Data Book for Guernsey provides additional information on some species not mentioned here, but the information in this document needs updating.

22 birds have been added to the Priority Species List (see below), comprising of seabirds, waders, thrushes and finches. All breeding bird species and their nests are protected by Section 7 of the Animal Welfare Ordinance. This Ordinance protects against destruction, damage and disturbance of nests and eggs, as well as the disturbance of birds rearing young and thus, the dependent young.

- Grey Plover (*Pluvialis squatarola*)
- Ringed Plover (*Charadrius hiaticula*)
- Curlew (*Numenius arquata*)
- Turnstone (*Arenaria interpres*)
- Dunlin (*Calidris alpina*)

- Purple Sandpiper (*Calidris maritima*)
- Redshank (*Tringa totanus*)
- Black-headed Gull (*Chroicocephalus ridibundus*)
- Lesser Black-backed Gull (*Larus fuscus*)
- Common Tern (*Sterna hirundo*)
- Balearic Shearwater (*Puffinus mauretanicus*)
- Northern Gannet (*Morus bassanus*)
- European Shag (*Phalacrocorax aristotelis*)
- Cuckoo (*Cuculus canorus*)
- House Martin (*Delichon urbicum*)
- Dartford Warbler (*Sylvia undata*)
- Starling (*Sturnus vulgaris*)
- Fieldfare (*Turdus pilaris*)
- Mistle Thrush (*Turdus viscivorus*)
- Meadow Pipit (*Anthus pratensis*)
- Greenfinch (*Chloris chloris*)
- Linnet (*Linaria cannabina*)

6.4.1 Terrestrial Birds

Surveys that collect data on terrestrial birds include the BTO Breeding Bird Survey and Garden Birdwatch. 20 of the Breeding Bird Survey's allocated 1km survey squares have had at least 1 year's worth of data recorded in Guernsey. These 1km squares cover 1,706 ha (26.9%) of the 6,344ha that make up Guernsey. The Breeding Bird Survey covers 54 regularly breeding species, 13 scarce breeders and 40 non-breeders or former breeders. Historic breeders, i.e. those species which no longer breed in Guernsey, include Turtle Dove (*Streptopelia turtur*), Skylark (*Alauda arvensis*), Tufted Duck (*Aythya fuligula*), Lesser Whitethroat (*Sylvia curruca*) and Ringed Plover (*Charadrius hiaticula*). Research also suggests we have lost a further 15 breeding species from the island (J. Henney, personal communication, 2022). Trends were created for the 24 most common bird species in Guernsey, using data from 2008-2018 (see Table 18). However, caution should be taken when referring to these trends as they are based on very small sample sizes. An indicator was also created for farmland, woodland and urban birds (see Figure 26). The woodland indicator is increasing presumably due to increased woodland cover in Guernsey. In line with the UK, farmland birds are decreasing.

Table 18 Trend data for some of Guernsey's common birds (Barnes et al., 2021)

Habitat Association	Common Name	Species Name	10-year trend (2008-2018)	5-year trend (2013-2018)
Farmland	Starling	<i>Sturnus vulgaris</i>	-76%	-48%
Farmland	Magpie	<i>Pica pica</i>	-69%	-41%
Farmland	Swallow	<i>Hirundo rustica</i>	-63%	-50%
Farmland	Greenfinch	<i>Chloris chloris</i>	-62%	-29%
Urban	Collared Dove	<i>Streptopelia decaocto</i>	-45%	-26%
Farmland	Whitethroat	<i>Sylvia communis</i>	-37%	-22%
Woodland	Chaffinch	<i>Fringilla coelebs</i>	-22%	-4%
Farmland	Kestrel	<i>Falco tinnunculus</i>	-12%	-16%
Woodland	Blackbird	<i>Turdus merula</i>	-1%	30%
Woodland	Robin	<i>Erithacus rubecula</i>	9%	23%
Urban	House Sparrow	<i>Passer domesticus</i>	12%	87%
Farmland	Carrion Crow	<i>Corvus corone</i>	22%	9%
Woodland	Song Thrush	<i>Turdus philomelos</i>	23%	72%
Farmland	Woodpigeon	<i>Columba palumbus</i>	24%	22%
Woodland	Wren	<i>Troglodytes troglodytes</i>	24%	-6%
Woodland	Chiffchaff	<i>Phylloscopus collybita</i>	38%	1%
Woodland	Dunnock	<i>Prunella modularis</i>	44%	40%
Woodland	Great Tit	<i>Parus major</i>	58%	69%
Generalist	Oystercatcher	<i>Haematopus ostralegus</i>	82%	21%
Woodland	Blue Tit	<i>Cyanistes caeruleus</i>	114%	22%
Woodland	Blackcap	<i>Sylvia atricapilla</i>	116%	33%
Farmland	Goldfinch	<i>Carduelis carduelis</i>	498%	101%

*Severe declines over 10 years of >50% are highlighted in red, moderate declines (>25%) in orange, increases of >50% are in light green and increases >100% are dark green.

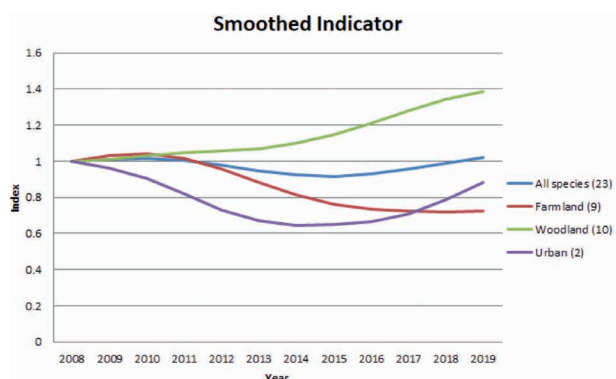


Figure 26 Smoothed bird indicators (Barnes et al., 2021)

Encouragement of consistent and sustained coverage of Breeding Bird Survey squares across Guernsey would allow for more trends to be calculated for other species. Ideally all 20 previously surveyed squares would be covered every year.

1/3 of Guernsey's terrestrial area is made up of gardens (Barnes et al., 2021). 16 gardens were monitored in various years between 1995 to 2021, during which 82 bird species have been recorded. Starlings were the most abundant, followed by the House Sparrow. However, the current sample size is too small to produce any meaningful analysis; a larger sample size over the long-term would enable useful analysis to be undertaken. Encouraging more volunteers to take part in Garden Birdwatch would complement data from the Breeding Bird Survey and allow additional species to be monitored.

Many of our bird species are effectively monitored by at least 1 survey, however half of our 72 breeding species, such as Stonechat (*Saxicola rubicola*) and Swift (*Apus apus*), are not monitored sufficiently to produce any trend or productivity data.

It is possible that targeted surveys may help to obtain data on these 36 species. Also conducting Constant Effort Site ringing studies may provide further information. Constant Effort Sites form part of the first national standardised ringing programme within the BTO Bird Ringing Scheme. Ringers operate the same nets in the same locations over the same time period at regular intervals through the breeding season. This provides valuable trend information on abundance of adults and juveniles, productivity, and also adult survival rates for 24 species of common songbird.



Case Study: Barn Owl (*Tyto alba*)

The Guernsey Barn Owl Survey is an example of a targeted survey run by the Ornithology Section of La Société Guernesiaise that was set up to monitor breeding success and numbers. Barn Owls were found to breed in every parish in Guernsey, although they tended to favour more rural parishes. There are around 19 breeding sites and around another 8 roosting sites. This is in comparison to 13 known breeding sites and 8 roosting sites in the late 1990s.

The fledged chick count needs to be balanced against a high mortality rate among first-year birds over the winter (see Figure 27). It is known that a high proportion will not survive

the winter, which will affect any population estimates. A count could not be obtained from all survey sites and there may be some breeding sites that are currently not known, so it is likely that the estimated minimum population is about 100 birds (Davis, 2022).

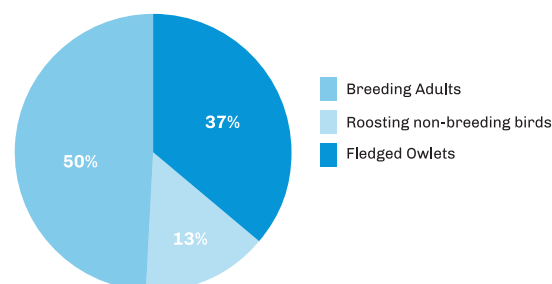


Figure 27 Barn Owl Abundance 2022 (Davis, 2022)

6.4.2 Seabirds

Various seabird surveys have been conducted in Bailiwick waters. Guernsey and Herm participate in a seabird monitoring program periodically to record the populations of our breeding seabirds. There is data from 1970, 1986-1992, 2000, 2015, 2020, 2021 and 2023. Overall, general trends show seabirds are declining. In particular, Shags (*Phalacrocorax aristotelis*) and Herring Gulls (*Larus argentatus*) have suffered declines (see Table 19), and this is shown in the most recent survey in 2023 (see Figure 28 and Figure 29). Guernsey has nationally important populations of these species. Some seabird counts may be under-estimated; Adult Herring Gulls counted in 2021 at 1 site, were feeding around a fishing boat offshore so numbers of breeding birds were estimated. Totals for Puffins, Razorbills and Cormorants in 2023 are also considered to be under-estimates. Our islets such as Lihou are excellent nesting grounds for our seabirds and it is vital that disturbance is kept to a minimum, to help boost breeding success. Better protection of vital nesting habitats and feeding areas may help boost numbers. Continued monitoring is also necessary. Seabirds are top predators of marine ecosystems, and good indicators of the health of the marine environment.

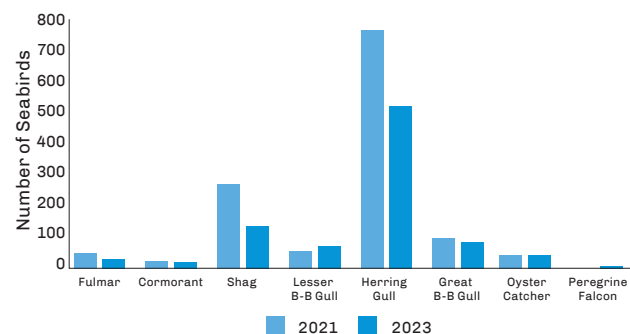


Figure 28 Seabird surveys of breeding pairs conducted in 2021 and 2023. Note: Some figures are likely to be under-estimated. Where there is a range of figures, the highest value has been used (J. Hooper, personal communication, 2023)

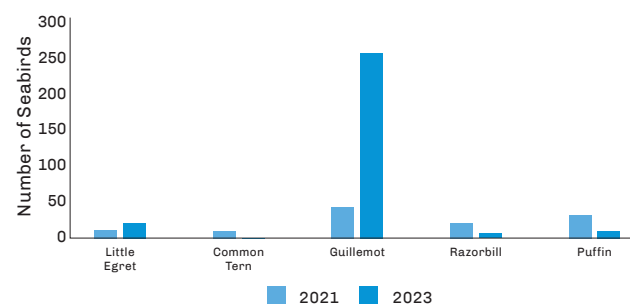


Figure 29 Seabird surveys of individuals conducted in 2021 and 2023. Note: Some figures are likely to be under-estimated. Where there is a range of figures, the highest value has been used (J. Hooper, personal communication, 2023)



Table 19 Local Trends produced for Seabird census in 2000 and 2015 (All Bailiwick Islands) (Veron & Veron, 2017)

Species Name	Common name	Local trend 2000	Local trend 2015
<i>Alca torda</i>	Razorbill (Individuals)	Stable	Stable
<i>Fratercula arctica</i>	Puffin (Individuals)	Decreasing	Decreasing
<i>Fulmarus glacialis</i>	Fulmar	Stable	Stable
<i>Larus argentatus</i>	Herring Gull	Stable	Decreasing
<i>Larus fuscus</i>	Lesser Black-backed Gull	Increasing	Increasing
<i>Larus marinus</i>	Great Black-backed Gull	Stable	Stable
<i>Phalacrocorax aristotelis</i>	Shag	Stable	Decreasing
<i>Phalacrocorax carbo</i>	Cormorant	Fluctuating	Increasing
<i>Sterna hirundo</i>	Common Tern	Fluctuating	Decreasing
<i>Uria aalge</i>	Guillemot (Individuals)	Increasing	Stable

Note: there are differences in methodology and species counted between historic and recent surveys

Light Green = stable, Dark Green = increasing, Orange = fluctuating, Red = decreasing

Species Spotlight: BALEARIC SHEARWATER



Balearic Shearwater
(*Puffinus mauretanicus*)
Andy Marquis

The Balearic Shearwater (*Puffinus mauretanicus*) first started appearing in Bailiwick waters in large numbers in 2004 (Barnes et al., 2021).

It is Critically Endangered with a relatively small population of 19,000 individuals (Barnes et al., 2021).

At least 15% of the global population moult in Bailiwick waters, making them our most important migrant seabird (Barnes et al., 2021).

The Balearic Shearwater population is undergoing a rapid decline due to low adult and juvenile survival rates. The main threats are by-catch at sea and predation at breeding colonies by introduced mammals.

Also new development in the vicinity of breeding colonies and increased human disturbance both have a significant impact. Population models predict an over 90% decline in 3

generations with an average extinction time of around 60 years (Barnes et al., 2021). Monitoring is needed and as part of the French National Action Plan⁶, Guernsey and partners in France and Jersey are conducting boat surveys of our waters to establish the numbers present through the summer months.

Guernsey also supports:

1% of the national European Shag population which are found in Guernsey and Herm (Barnes et al., 2021).

Nationally more than 1% of the Great Britain, Isle of Man and C.I. populations of Storm Petrel (*Hydrobates pelagicus*), Northern Gannet, European Shag, Great Black-backed, Herring and Lesser Black-backed Gull (Barnes et al., 2021).

Internationally more than 1% of the biogeographic population of Northern Gannet, European Shag and Lesser Black-backed Gull (Barnes et al., 2021).

6.4.3 Waders

Wading birds in Guernsey are declining. In 2020, findings showed a 90% decline in the annual observed Turnstone and Dunlin numbers on our beaches in the last 40 years (States of Guernsey, 2020b).

Records from the last 20 years show a 99% decline in Purple Sandpipers, as just one example (Horton, 2021). Many waders are site-faithful and struggle to adapt to increased disturbance.

Climate change is also a key driver of declines, as due to milder winters in other parts of the world, wading birds no longer need to migrate to Guernsey and Herm (BTO, 2024). Declines are also representative of broader declines taking place across the whole UK.

The BTO Wader Count is one of Guernsey's longest running surveys and covers a large proportion of beaches in Guernsey. Monthly counts are taken to record wading birds. 19 species have been recorded annually in sufficient numbers to support further detailed analysis (see Table 20).

⁶ <https://www.ofb.gouv.fr/en/actualites/first-successful-campaign-monitoring-balearic-shearwater#:~:text=To%20halt%20the%20decline%20of,off%20the%20south%20Brittany%20coast.>

Table 20 Changes in populations of 19 waders found in Guernsey from the start of the survey to 2019 (Barnes et al., 2021)

Species	Short Term (5 year % change)	Medium Term (10 year % change)	Long Term (25 year % change)	Since Baseline	Percentage of total C.I. Wintering Population supported by Guernsey Shores
Dark-Bellied Brent Goose	-5	88		875	5-15%
Shelduck	-19	110			Rarely recorded elsewhere in C.I.
Grey Heron	0	-25	10	13	20-40%
Little Egret	-32	6	1100	1100	Increased from around 20% in 2007/8 to 50%
Cormorant	-19	-19	30	160	Was about 70%, then halved and has increased again*
Oystercatcher	-24	-7	-8	14	25-30%
Lapwing	67	-81	-78	-91	Only recorded in small numbers
Grey Plover	-58	-55	-85	-78	Was 20%, fallen to 10-15%
Ringed Plover	-38	-23	-60	-51	Was 20-30% now risen to 60%*
Curlew	-47	13	-27	85	Was 20-40% now risen to 40-50%*
Turnstone	-35	-65	-89	-90	Was 60% in early 1980s, now 20%
Sanderling	-36	-33	-31	500	5-10%
Dunlin	-27	-45	-88	-95	20% in early 1980s, now 5-10%
Snipe	57	120	57	-48	
Redshank	-42	-46	-85	-91	20% in early 1980s, now 10%
Black-headed Gull	-20	-41		-67	70-80% in 1990s, then halved and has increased again recently*
Great Black-backed Gull	-26	-28		-1	60% in 1999/00 increased to near 100% recently
Herring Gull	-19	-30		53	At least 80%
Lesser Black-backed Gull	-69	-64		63	Roughly 40%

*numbers have increased due to declines in other Channel Islands, meaning more birds have moved to Guernsey.



Species trend data allows for **Alert Status** to be calculated for the 19 species:

Red	High Alert: decline of at least 50% over term
Yellow	Medium Alert: decline of at least 25% but less than 50% over term
White	"No" Change: decline of at least 25% but less than 33% over term
Light Green	Medium Increase: increase of at least 33% but less than 100% (that required mitigate a previous medium Alert)
Dark Green	High Increase: increase of at least 100% (that required mitigate a previous high Alert)
Grey	Comparison unavailable: (outwith data range or start year has a value of zero)

Figure 30 Criteria for alert status (Barnes et al., 2021)



Overall, the general picture shows a decline in the medium term of at least 25% for 7 wader species, and at least 50% for 4 wader species (See Figure 30). Lapwing (*Vanellus vanellus*), Grey Plover, Ringed Plover, Turnstone, Dunlin, Black-headed Gull and Redshank have seen long-term declines since the survey started. These species are found on local shores and have majorly declined due to increased human disturbance, although further investigation is needed to determine additional cause of declines.

A Wintering Waterbird Indicator has been produced for waterbirds, waders and gulls in Guernsey (Barnes et al., 2021). The smoothed waterbird indicator, in which random variations have been removed to help reveal patterns and trends, shows an overall decline in waders since the early 1990s (see Figure 31). Increases in gulls since the turn of the century have countered declines in wader indices, keeping the overall smoothed waterbird indicator above baseline values.

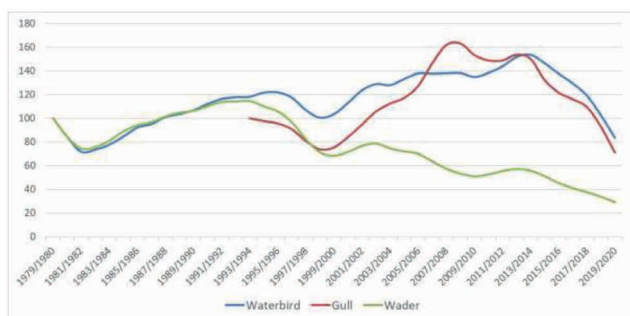


Figure 31 Smoothed Wintering Waterbird indicator (Barnes et al., 2021)

Historically, counts covered Herm and several inland wetland areas in Guernsey, but they are no longer undertaken. Conducting these wader counts in Herm again would help to get a broader picture of the state of waders in both islands and in a wider range of habitats.

6.4.4 Threats

- Physical and visual disturbance
- Disease

- Habitat loss and degradation
- Climate change

See section '7. Drivers of Change' for more information.

6.5 Plants

Guernsey and Herm are home to diverse floral communities. We have endemic species as well as species at the most northerly edge of their range. Officially 1585 plants are found throughout the Bailiwick (La Societe Guernesiaise Botany Section, 2024), although some of these will be non-native species, and others may not have been recorded in recent years. 48 species have been made Priority Species by the States of Guernsey and will be monitored with regular surveys. Most of these Priority Species are also categorised as being rare (RRR), scarce (RR) or uncommon (R) in the UK. In total, 169 plants in the Bailiwick have been categorised on this UK rarity scale (see Figure 32). Just under half of the 169 plants are categorised as scarce, meaning they are found at less than 100 known sites. Rare is categorised as less than 25 known sites and uncommon less than 250. Overall, 39 species have been declared lost from Guernsey such as Early Marsh-orchid (*Dactylorhiza incarnata*) and Corn Mint (*Mentha arvensis*). Surveys can sometimes rediscover lost species, so this number could be subject to change.

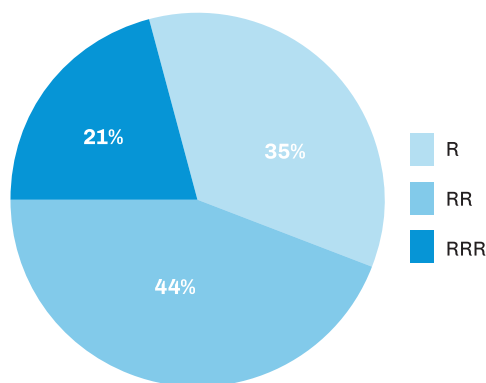


Figure 32 Percentage of plant species categorised as Rare, Scarce or Uncommon, on the UK rarity scale, out of the 169 species categorised in the Bailiwick (La Societe Guernesiaise Botany Section, 2024).



Habitats which support high plant diversity include coastal grassland and heathland, saltmarsh, sand dunes, cliffs, wet meadows, earth banks.

6.5.1 Species Spotlight



Guernsey Fern
Aaron Yeandle

There are 3 species of hybrid fern in Guernsey, that are seldom found anywhere else. They are:

Guernsey Spleenwort (*Asplenium x sarniense*)

Guernsey Fern (*Asplenium x microdon*)

Jackson's Fern (*Asplenium x jacksonii*)

2 of these ferns require specialist identification, with examination of spores under a microscope needed. They are found on shaded hedge banks in the south of the island; care is required when hedge-cutting to allow these plants to flourish. Members of La Société Botany Section record and monitor their distribution.

Guernsey Fern, also known as Moore's Spleenwort, appears to be found on vertical hedge banks and seems to compete fairly well (Coleman, 2023). A monitoring survey conducted in 2023 found 32 confirmed plants, including 14 new plants (See Figure 33) (Coleman, 2023). After hedge-cutting in 2024, plants were revisited to see the effects of the hedge cut. It was found that 7 of these confirmed plants were destroyed, 15 damaged and 10 survived relatively unscathed. 2 new plants have been found in 2024, from previously un-recorded sites, so there is a current total of 27 plants being monitored (G. Coleman, personal communication, 2024). The monitoring program will be run continuously to determine the status of this unique hybrid fern, learn more about its habitats and the pressures that threaten it.

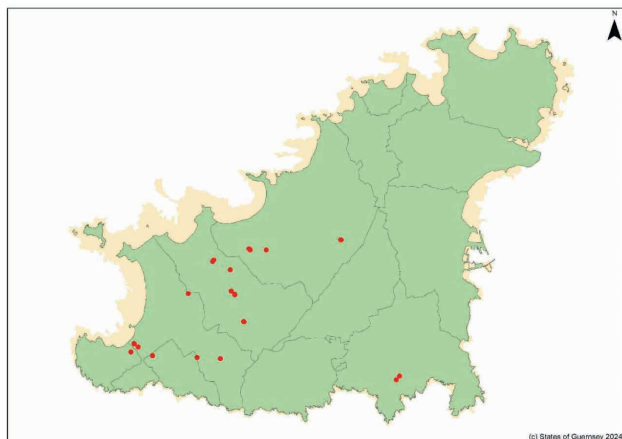
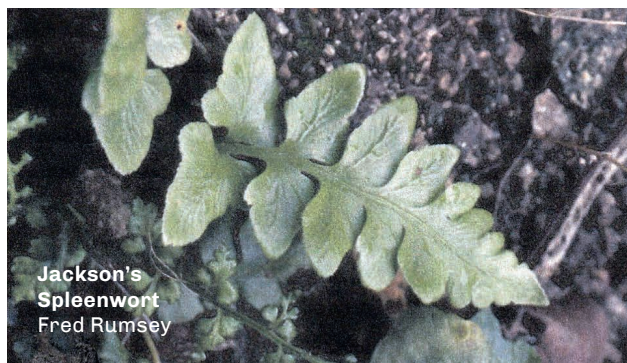


Figure 33 Map of the confirmed specimens of the Guernsey Fern (*Asplenium x microdon*) (G. Coleman, personal communication, 2024). Base mapping (c) States of Guernsey.



Guernsey Spleenwort
Asplenium x sarniense
Aaron Yeandle



Jackson's Spleenwort
Fred Rumsey

The Guernsey Spleenwort shows hybrid vigour and competes well with other species (Gibby et al., 1996). Recent records show 6 sites have been identified in St Saviour, St Pierre du Bois and Torteval (H. Litchfield, personal communication, 2023). A monitoring project to record plant specimens of the Guernsey Spleenwort is currently underway (G. Coleman, personal communication, 2024).

Jackson's Spleenwort has very few records with only 1 known plant recorded. A visit to Guernsey by a British plant specialist in 2015 recorded it at 1 location (La Societe Guernesiaise Botany Section, 2024) Recent surveys conducted in 2023, did not find any specimens of Jackson's Spleenwort (G. Coleman, personal communication, 2024).

6.5.2 Other Species

Guernsey Centaury (*Exaculum pusillum*) categorised as rare, this plant likes short, moist open turf in damp, boggy hollows. There is only 1 known site in the British Isles, which is in Guernsey. (H. Litchfield, personal communication, 2024a)

Guernsey Elm (*Ulmus minor* spp. *sarniensis*) this plant is widespread on Guernsey. Many were historically killed by Dutch Elm Disease (DED). Grows to circa 15ft before being hit by DED again. (H. Litchfield, personal communication, 2024a)

Dwarf Millet (*Millum vernale* spp. *sarniense*) this plant likes short turf on sand dunes. There is only 1 known site in the world, which is in Guernsey. (H. Litchfield, personal communication, 2024a)

Guernsey Rock Sea-lavender (*Limonium binervosum* spp. *sarniense*) this plant is categorised as rare and is found along coastal dunes, mostly at Pembroke where it is spreading. It also likes soft cliffs. (H. Litchfield, personal communication, 2024b)

6.5.3 Threats

- Habitat loss and degradation
- Invasive non-native species
- Inappropriate land management

See section '7. Drivers of Change' for more information.



**While there is some data
on commercial fish species,
generally data about our
fish populations and their
health is lacking**

6.6 Freshwater Fish and Invertebrates

Having a diverse native benthic community is key to having a healthy freshwater environment. However very little data on our freshwater species is available.

Species Spotlight: EUROPEAN EEL

European Eels (*Anguilla Anguilla*) are Critically Endangered on the IUCN Red List (Gilmour & David, 2020).

There has been a 95% population decline in Europe since the 1980s (Environment Agency, 2022).

While we know they are present in Guernsey, there has not been any surveying on freshwater eels in Guernsey or Herm.

6.6.1 Benthic Macroinvertebrates

Guernsey Water has conducted benthic surveys on 23 streams across the island using the kick sampling methodology. This technique involves agitating the stones and sediment in a stream and then catching the sample in a hand net, further downstream (Clayton, 2019). The abundance and variety of benthic invertebrates is an indicator of water quality as the majority are unable to tolerate water bodies affected by pollution (Tampo et al., 2021). Mayflies and caddisflies are intolerant of pollution, so the presence of these species indicates a healthy ecosystem. The greater the taxa richness, the better the water quality.

Historic data is also available from 2004 and 2005. Benthic surveys were conducted by Guernsey Water on 18 streams with 108 surveys carried out in total. Scores were calculated using the Biological Monitoring Working Party (BMWP) system where families of benthic macroinvertebrates are scored between 1-10 based on their pollution tolerance (Department for International Development, 2006). Stream results ranged from 7 to 50, with higher scores indicating better stream conditions.

The average score is between 25-35, which is considered moderate according to the BMWP system (see Table 21). Streams in the south of the island fared better than those further north. The poorest streams were Vale Pond and Beau Vallee which both have similar muddy streambeds (see Figure 34). Streams with less sediment will have increased scores. In 2004, 36 different families were found compared with 26 in 2005 (S. Brown, personal communication, 2023). Pre du Murie, Padins and Fauxquet had the greatest number of different species in 2004. In 2005, Choffins had the highest number of species with 13 and 5 other streams had 12 different species (see Figure 35).

Table 21 Biological Monitoring Working Party Macroinvertebrate scoring results (Asatryan & Dallakyan, 2021)

BMWP Score	Ecological Status
>150	Excellent
101-150	Very Good
50-100	Good
25-49	Moderate
0-24	Poor

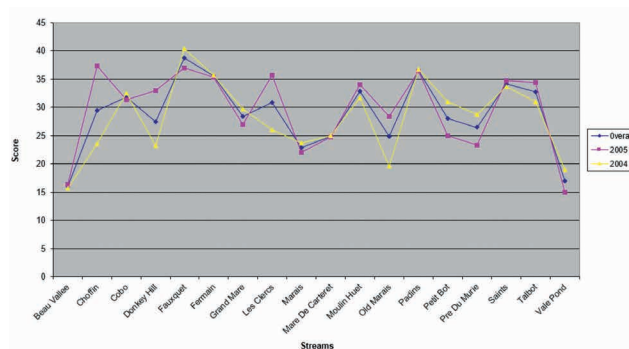


Figure 34 Benthic Score Means of locations surveyed by Guernsey Water in 2004 and 2005 (S. Brown, personal communication, 2023)

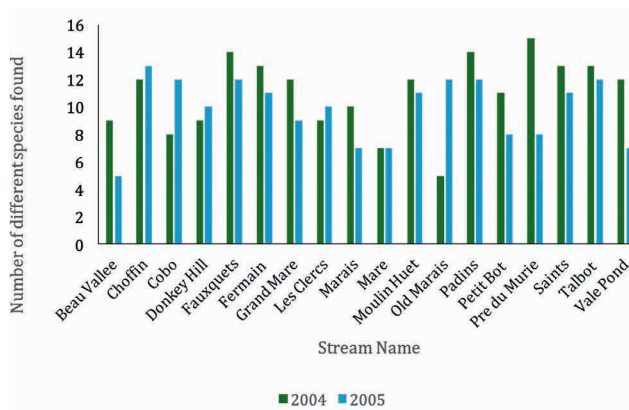


Figure 35 Comparison of benthic species found in 18 different streams sampled in 2004 and 2005 (S. Brown, personal communication, 2023)

Species from 42 different taxa were found in total. 4 families (*Chloroperlidae*, *Perlidae*, *Perlodidae* and *Sericostomatidae*) are classed as the highest scoring benthic invertebrates but were not found regularly (S. Brown, personal communication, 2023).

6.6.2 Threats

- Invasive non-native species
- Pollution
- Land use change
- Development
- Annual stream (douit) clearance

See section '7. Drivers of Change' for more information.

6.7 Marine Mammals

In Bailiwick waters, different types of marine mammals have been spotted including whales and seals. While many of our cetaceans are migratory, sightings of whales, dolphins, and porpoises appear to be increasing in Guernsey and Herm. Local interest in cetacean spotting has led to more sightings being submitted to the Bailiwick DolFin Project, and surveys and citizen science help provide information on the marine mammals found in our waters. Most of our marine mammals are protected by the Bonn Convention and/or ASCOBANS⁷ and the States of Guernsey consider Annex II species of the Habitats Directive, when reviewing sensitivity of receptors during development planning for example, demonstrating their value in an international context. They are all listed as UK BAP Priority Species. Additionally, Guernsey and Herm's marine waters have been classified as part of a Channel Region Important Marine Mammal Area (IMMA), as identified by the IUCN International Marine Mammal Protected Area Task Force.

⁷<https://www.ascobans.org/>



6.7.1 Seals

Grey Seals (*Halichoerus grypus*) are found in the Bailiwick along with occasional sightings of Common Seals (*Phoca vitulina*). Grey Seals are the larger of the 2 species. They spend lots of time out at sea feeding but can be seen 'hauled out' on rocks and beaches. A resident Grey Seal colony has been established at The Humps, north of Herm and an anecdotal second population is becoming established around the Hanois Lighthouse. It is estimated that Britain has 40% of the world's overall population of Grey Seals (The Wildlife Trust, 2024).

Surveys of the seal colony at The Humps have been undertaken between 2019 and 2022 by ACLMS (see Table 22). This is part of a wider population monitoring project including the Channel Islands and other stakeholders in the Bay of Normandy run by the Groupe Mammalogique Normand (ACLMS, 2023b).

Table 22 Number of Grey Seals recoded at The Humps colony from 2019-2022 (ACLMS, 2023b)

Year	Number of Seals Recorded
2019	27
2020	31
2021	55
2022 (co-ordinate system for recording location changed from previous years)	81

6.7.2 Cetaceans

There are 5 species of dolphin, 1 porpoise and 4 baleen whale that have been recorded in Bailiwick waters (see Table 23). Some cetaceans use our waters as a refuge and have

been seen in groups with calves and juveniles. We know that sightings of dolphins have increased, but it is not yet understood why.

The increased number of sightings may be due to increased public awareness and hence increased level of effort by data collection groups, rather than any actual changes in cetacean populations but may also be due to an actual increase in the presence of dolphins using our waters. Dolphins are mostly seen on the east coast, which could be the result of there being a higher level of commercial and recreational water use in that area, leading to an increased level of sightings. Some species are much easier to record as they are attracted to boating activity.

Previously, cetacean surveying was conducted inconsistently by experts and volunteers. The Bailiwick Cetacean Group collected data between 1990 and 2005 and produced summary reports on sightings from this period. The Bailiwick DolFin Project is a cetacean monitoring program that was set up in 2019. Public records and effort-based survey data is collected, with occasional boat surveys. Sightings are then classed as 'definite, probable and possible' according to Sea Watch Foundation recording protocol. Acoustic survey data is also being collected and analysed, but this was not available to be included in this report.

6.7.2.1 Sighting Data 1990- 2005

The Bailiwick Cetacean Group collected data between 1990 and 2005. They recorded public cetacean sightings, seal sightings and stranding incidents. Reports were produced that summarised the sightings of cetaceans from 1990 to early 2002 (see Figure 36) and discussed behaviour and anthropogenic pressures in the marine environment. As the majority of the sightings recorded during this time were from public observation rather than surveying, it is difficult to analyse population trends over time from this data. However, this data has allowed for differences in species and sighting frequency to be reported.

Table 23 List of marine mammals found in Guernsey and Herm waters (N. Harris, personal communication, 2024)

Species Name	Common Name	Status in Guernsey and Herm
<i>Balaenoptera acutorostrata</i>	Minke Whale	Uncommon
<i>Balaenoptera physalus</i>	Fin Whale	Uncommon
<i>Delphinus delphis</i>	Common Dolphin	Common, pod size averages 10-30 individuals.
<i>Globicephala melas</i>	Long-finned Pilot Whale	Rare
<i>Grampus griseus</i>	Risso's Dolphin	Seen during summer. Pod size averages 7-20 individuals.
<i>Lagenorhynchus acutus</i>	Atlantic White-sided Dolphin	Occasional
<i>Megaptera novaeangliae</i>	Humpback Whale	Rare
<i>Orcinus orca</i>	Orca	No photographic evidence to verify the few sightings.
<i>Phocoena phocoena</i>	Harbour Porpoise	Rare (likely to be under-reported due to their shy nature).
<i>Tursiops truncatus</i>	Bottlenose Dolphin	Common, pod size averages 20 individuals.

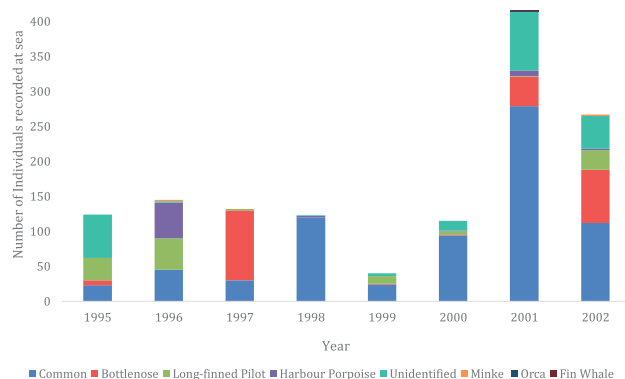


Figure 36 Cetacean sightings spotted at sea in 1990-2002 (La Société Guernesaise, NDb)

6.7.2.2 Sighting Data 2019-2023

Between 2019-2023, 435 sightings were received with data including the date, sighting details and location details (N. Harris, personal communication, 2024) (See Figure 37). 85.5% of these sightings were classed as definite i.e they were recorded by trusted surveyors or there is accompanying evidence to verify the species. The most frequently recorded species per year was Bottlenose Dolphin, making up 66.4% of sightings (N. Harris, personal communication, 2024).

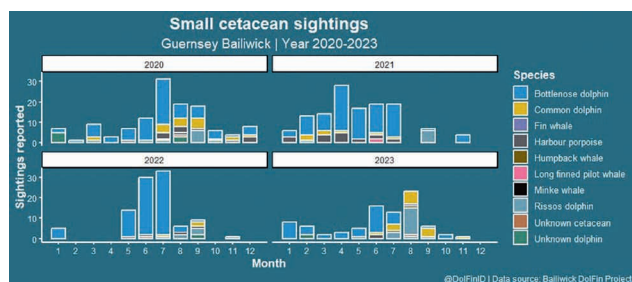


Figure 37 Cetacean sightings recorded in Bailiwick waters in 2020-2023

6.7.2.3 Stranding Data

Stranding refers to an event where a cetacean or seal is washed up on the shore either alive or deceased. There have been 33 strandings recorded in Guernsey from 1990-2023 (see Figure 38) (ACLMS, 2023a; International Whaling Commission, 2024). In recent years there has been an increase in the number of strandings but the cause of this is unknown. It could be due to an increase in population sizes so a higher number of strandings may occur, or that more people are utilising the coast throughout the year and therefore more strandings are noted and reported. Of those recorded, 2 strandings were live but died shortly after. The majority of the strandings have been recorded from the west coast. The reasons for this are not known but may be due to the gentler slopes of the west coast area which facilitate carcasses being washed up. Also, west coast beaches are more accessible than beaches on the south coast, so are utilised more by the public, increasing the chances of a stranding being noticed. Species found include Long-finned Pilot Whale, Common Dolphin, Harbour Porpoise, Risso's Dolphin, Grey Seal and some unidentified species. Common Dolphin accounts for just under 50% of all strandings (see Figure 39). No postmortems have been conducted on stranded cetaceans since 2000, as it is not time or cost effective and there are health and safety issues surrounding zoonotic diseases. The data from previous postmortems is not available locally as tissue sampling analysis for contaminants was conducted by the Natural History Museum and the results were not returned to Guernsey (D. Chamberlain, personal communication, 2024). Conducting postmortems may provide more information about the causes of death and could give an indication of the health of our marine mammals.

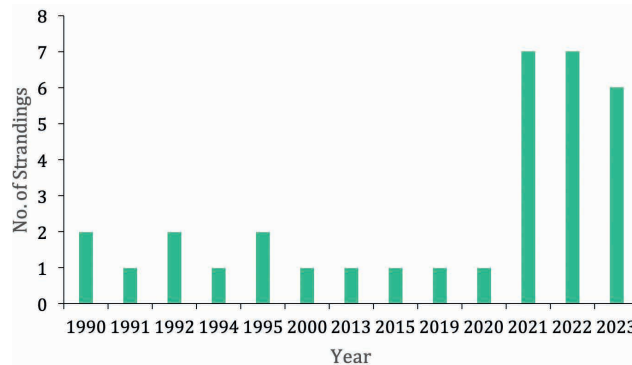


Figure 38 Number of reported Cetacean and Seal strandings in Guernsey since 1990 (ACLMS, 2023a)

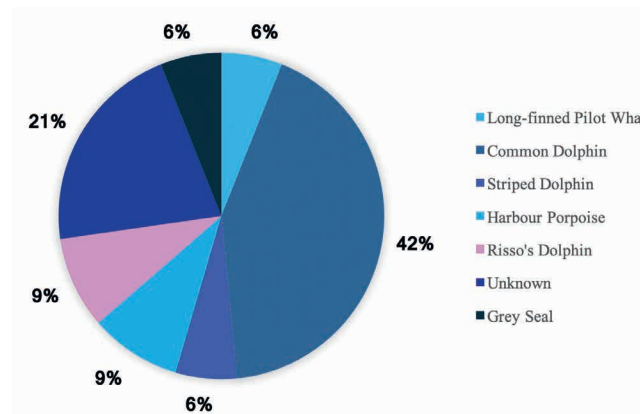


Figure 39 Species percentage of strandings from 1990-2023 (ACLMS, 2023a)

6.7.4 Threats

- Disturbance
- Pollution
- Increased sea temperatures due to climate change
- Boat strikes
- By-catch

See section '7. Drivers of Change' for more information.

6.8 Marine Fish

6.8.1 Sharks and Skates

In British waters, there are 21 resident shark species, at least another 11 deep-water shark species and 18 species of skates and rays regularly seen (The Shark Trust, 2020a, 2020b). Local knowledge of our sharks and skates comes from the collection of eggcases in Guernsey and Herm. Eggcases, or mermaid's purses as they are known locally, are tough, leathery capsules that contain the embryo of a shark or skate. As of 2023, there are 8 different species of eggcases found in Guernsey and Herm, according to the Shark Trust (see Table 24). The majority of these are found on the west coast of Guernsey, possibly due to the beaches there which individuals are more likely to walk on and find eggcases, or environmental conditions such as tide and wind affecting distribution (See Figure 40 and Figure 41).

Sharks, skates and rays are long-lived, reproduce late in life and produce few young, making them vulnerable to human threats such as overfishing. Over 50% of British shark species are considered Threatened or Near Threatened (The Shark Trust, 2020a). The collection of eggcases can only tell us so much and additional methods of data collection are needed to determine what species are present in Guernsey and Herm waters.

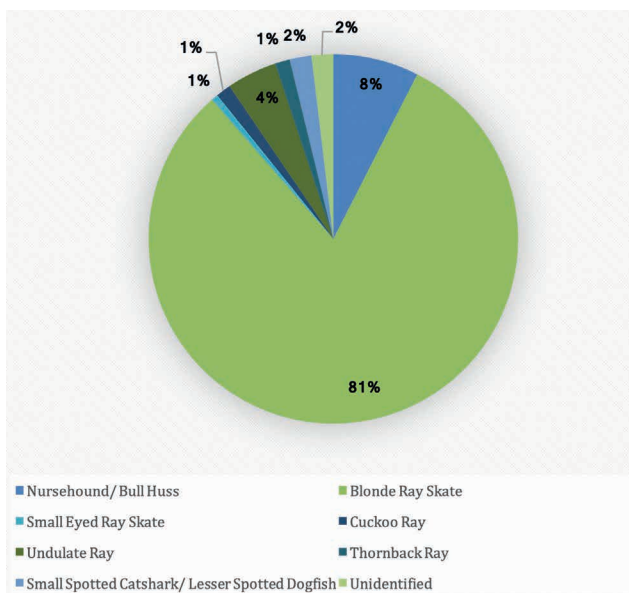


Figure 40 Percentage of Shark and Skate eggcases found in Guernsey over the last 10 years (The Shark Trust, 2023a)

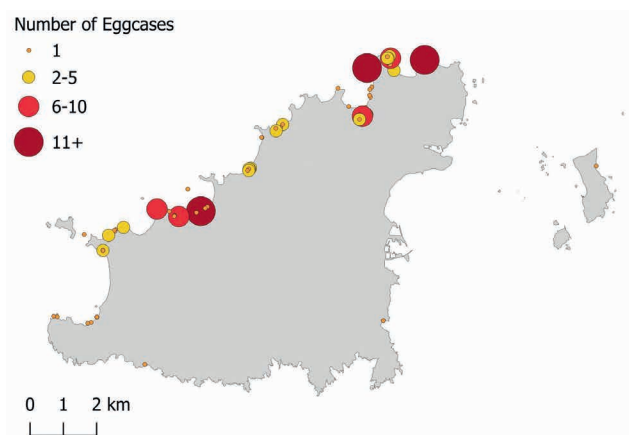


Figure 41 Number of eggcases found in Guernsey and Herm 2003-August 2023 (The Shark Trust Great Eggcase Hunt, personal communication, 2024)

Table 24 Global Red List Status of Shark/Skate eggcase species found in Guernsey as of 2023 (The Shark Trust, 2023b)

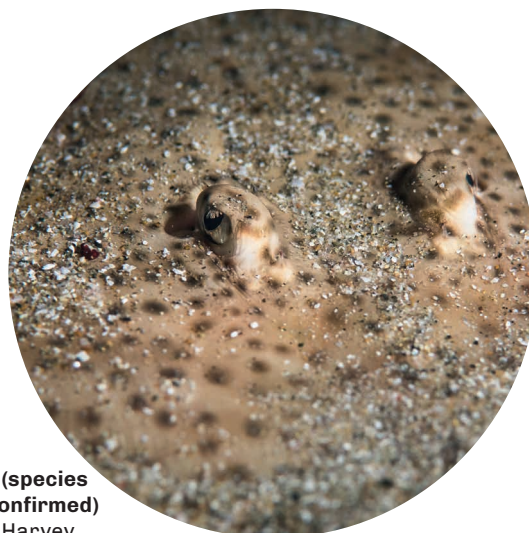
Species Name	Common Name	Global IUCN Red List Status (IUCN, 2024)
<i>Leucoraja naevus</i>	Cuckoo Skate	Least Concern
<i>Raja brachyura</i>	Blonde Skate/Ray	Near Threatened (Decreasing)
<i>Raja clavata</i>	Thornback Skate	Near Threatened (Decreasing)
<i>Raja microocellata</i>	Small-eyed Skate	Near Threatened (Decreasing)
<i>Raja montagui</i>	Spotted Ray	Least Concern
<i>Raja undulata</i>	Undulate Skate	Endangered (Decreasing)
<i>Scyliorhinus canicula</i>	Small-spotted Catshark/ Lesser-spotted Dogfish	Least Concern (Stable)
<i>Scyliorhinus stellaris</i>	Nursehound	Vulnerable (Decreasing)

Green = Least Concern, Yellow = Near Threatened, Orange = Vulnerable, Red = Endangered

Species Spotlight: BLONDE RAY

Blonde Ray (*Raja brachyura*):
The Channel Islands are a hotspot, with Jersey accounting for over 50% of all verified Blonde Ray eggcases!

The Société Jersiaise has reported over 10,000 eggcases since 2003 with about 40% of these being Blonde Ray eggcases (The Shark Trust, 2023b). This seems to be reflected in Guernsey too as 81% of eggcases recorded at the Shark Trust were Blonde Rays.



Ray (species unconfirmed)
Tim Harvey

6.8.2 Other Marine Fish

There is a lack of data on our marine fish species across Guernsey and Herm's territorial waters. While we have data on the number of commercial fish being landed, this does not tell us much about the health of their populations more widely. There has been some debate recently about introducing Atlantic Bluefin Tuna (*Thunnus thynnus*) catch and release fishing in Bailiwick waters. Atlantic Bluefin Tuna was previously classed as Endangered globally and as such could not be fished in our waters. In 2021, the global IUCN

Red List status was changed to Least Concern (Collette et al., 2021). Anecdotally, Atlantic Bluefin Tuna stocks appear to be recovering in UK and Channel Island waters, however there is insufficient data to evidence this. In Jersey, Atlantic Bluefin Tuna is being tagged by the States of Jersey Marine Resources Team to monitor movement and behaviour (States of Jersey, 2022). Marine Resources in Jersey are also using acoustic monitoring through the FISH INTEL project, which records the movement and favoured habitats of important species like Sea Bass. This pan-island project will help to assess impacts of fishing and human activities in Channel Island waters. Fish are tagged with acoustic transmitters, which are then recorded by acoustic receivers set underwater around the various Channel Islands (Plaster, 2023). There are 4 receiver stations set up in Guernsey and Herm waters (see Figure 42). This project has only recently been implemented, as of 2021, so it will be exciting to see what is recorded. Participating in projects like these will improve our understanding of our activities and help provide the evidence to inform updated or new fishing regulations. This is particularly relevant for our marine wildlife that is not stationary and do not acknowledge territorial waters or other conceptual boundaries, and therefore helps to establish the wider status of marine ecology beyond our waters..

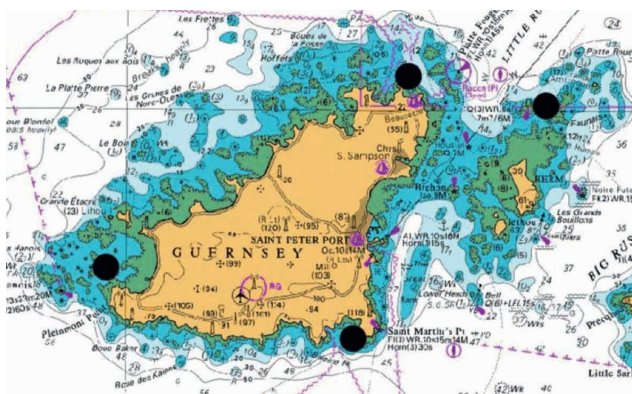


Figure 42 FISH INTEL receivers in Guernsey and Herm (J. Henney, personal communication, 2024b)

6.8.3 Threats

- Disturbance
- Pollution
- Increased sea temperatures due to climate change
- Commercial fishing (including by-catch)
- Habitat loss or degradation

See section '7. Drivers of Change' for more information.

6.9 Crustaceans

Crustaceans are invertebrates with a hard exoskeleton, segmented body and around four pairs of jointed legs (Marine Education Society of Australasia, 2015). These animals moult their shells as they grow and are vulnerable post-moult while they wait for their new shell to harden. Crustaceans in Guernsey and Herm are found in the intertidal zone, in rock pools and shallow waters as well as in subtidal habitats. They are an excellent food source for coastal fish, seals and seabirds. Crustaceans are easily impacted by climate activities such as increasing sea temperatures and are sensitive to pollutants so are a great indicator species for the marine environment.

There is anecdotal evidence to suggest that Crawfish, or Spiny Lobster (*Palinurus elephas*) populations, once common, are declining locally as a result of being over-fished in the 1960s and 1970s, but further data collection is needed.

In 2018, amended legislation was enacted in Sark which prohibits the import, export, possession, or sale of Crawfish in that island. These prohibitions are not in place in Guernsey or Herm, but fishers are encouraged to return berried individuals (those carrying eggs) to the sea if caught to help restore populations.

6.9.1 Species

- Broad-clawed Porcelain (*Porcellana platycheles*)
- Cleanser Crab (*Liocarcinus depurator*)
- Common Hermit Crab (*Pagurus bernhardus*)
- Crawfish (*Palinurus elephas*)
- Edible Crab (*Cancer pagurus*)
- European Lobster (*Homarus gammarus*)
- Four-horned Spider Crab (*Pisa tetradon*)
- Hairy/Bristly Crab (*Pilumnus hirtellus*)
- Long-clawed Porcelain (*Pisidia longicornis*)
- Leach's Spider Crab (*Inachus phalangium*)
- Long-legged Spider (*Macropodia rostrata*)
- Marbled Swimming Crab (*Liocarcinus marmoreus*)
- Masked Crab (*Corystes cassivelaunus*)
- Montagu's/Furrowed Crab (*Xantho hydrophilus*)
- Purple Shore Crab (*Hemigrapsus nudus*)
- Risso's Crab (*Xantho pilipes*)
- Shore Crab (*Carcinus maenas*)
- Spider Crab (*Maja squinado*)
- Sponge Crab (*Dromia personata*)
- Squat Lobster (*Galathea squamifera*)
- Toad Crab (*Hyas coarctatus*)
- Velvet Swimming Crab (*Necora puber*)

Porcelain crabs are not 'true crabs' as they have 6 legs rather than 8. They are very tiny

Hermit crabs are also not 'true crabs' as they do not have a full body hard carapace.

Several species of crab and lobster are fished commercially in Guernsey. Sea Fisheries collects landing data from the local fishing fleet. Data from Sea Fisheries shows the change



Masked Crab
Sue Daly



Velvet Swimming Crab
Sue Daly



in the numbers of crab landed, with the lowest recorded landings of Spider Crab since 2014 being recorded in 2020 (see Figure 43) (Guernsey Sea Fisheries, 2023). The changes may be influenced by demand and reduction in fleet size (and therefore fishing effort). If demand is high, then more effort may be put in, however this is also dependent on fuel costs and weather conditions. A major influencing factor behind the reduction in Spider Crab landings in 2020 was due to Covid-19 related restrictions which coincided with the annual Spider Crab season, and on movement and widespread closure of markets in the EU and UK. European Lobster landings have declined, with the lowest reported figures since 2009 recorded in recent years (see Figure 44) (Guernsey Sea Fisheries, 2023). However, decreases in the numbers being landed do not necessarily mean a decline in populations. Where effort is monitored, a better understanding of population levels can be determined. It is important to monitor juveniles of these species as well, which live in the intertidal zone, to help determine overall health and condition of the population.

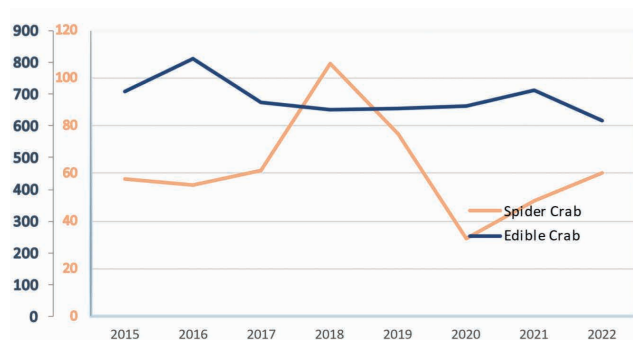


Figure 43 Annual landings of Spider and Edible Crab (Guernsey Sea Fisheries, 2023)

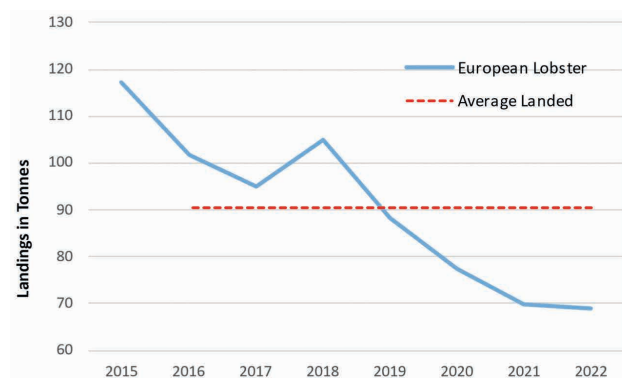


Figure 44 Annual landings of European Lobster (Guernsey Sea Fisheries, 2023)

6.9.2 Monitoring

A crab population dynamics survey, set up by the GBRC, is being carried out by La Société Guernesiale in Guernsey and Herm to collect baseline data; monitor population health; and to check for diseases and invasive species. Surveys at Belle Grève Bay in 2020 found 106 crabs of six different species (GBRC, 2023b).

Furrowed Crab and Porcelain Crab were the most commonly found species, followed by Edible Crab (see Figure 45). Data from these surveys needs cleaning and the survey method refining before more detailed analysis can take place. Surveys have also been conducted at Lihou, Portelet, Fisherman's Bay in Herm and Salerie Corner (GBRC, 2023c).

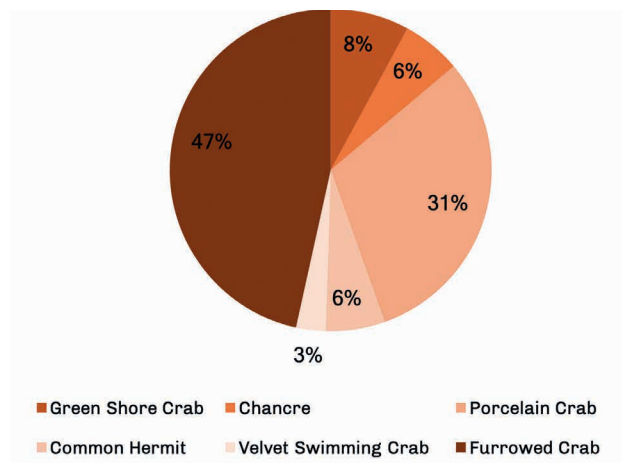


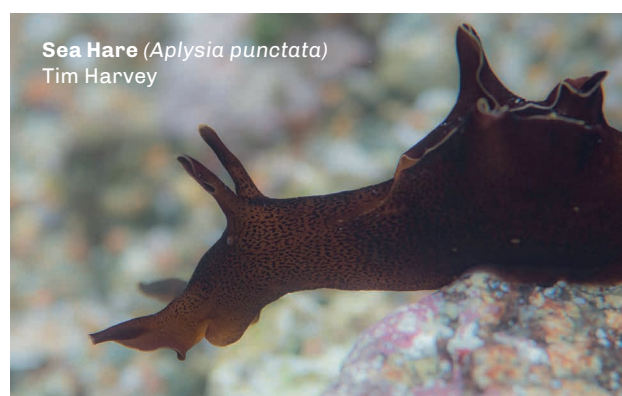
Figure 45 Belle Grève Crab Surveys (GBRC, 2023b)

6.9.3 Threats

- Increasing sea temperatures and ocean acidification due to climate change
- Invasive non-native species
- Coastal development
- Pollution
- Commercial fishing (including physical impact on habitats)
- Habitat loss/poor habitat condition

See section '7. Drivers of Change' for more information.

6.10 Marine Molluscs



Marine molluscs consist of species such as snails, slugs, mussels, clams, octopuses, scallops, oysters and chitons. Most of these species have soft bodies consisting of a head and foot region and are covered by a hard exoskeleton, such as snails or clams. They can be found attached to rocky

substrates, in rock pools or buried in soft substrates. They are an important component of the marine environment as a vital food source for seabirds, mammals, crustaceans, fish and other molluscs. Molluscs are also used by humans as sources of food and as a result can be overharvested.

6.10.1 Ormers

The Channel Islands are the most northerly geographic point that supports Green Ormers. These molluscs live on the lower rocky shore, underneath rocks and boulders. The Fishing Ordinance 1997, regulated by Guernsey Sea Fisheries, restricts harvesting of Ormers to prevent overfishing. Ormers can only be collected on the days of the full moon, new moon and the two days following between January 1st to April 30th only. The minimum take size is 80mm and Ormers cannot be collected via diving/submerged underwater (Guernsey Sea Fisheries, 2024a). Night-time collecting of Ormers was first banned in 1933, to ensure local stocks remained stable. This was lifted unintentionally in the 1990s due to changes in restrictions on other species. Night-time collecting of Ormers was banned again as of 2023, which reduces the number of permitted dates/tides. The ban was reinstated due to concerns over the sustainability of Ormer stocks (States of Guernsey, 2023).

There are currently no long-term consistent data studies on the state of our flagship mollusc. A project was started by La Société Guernesiaise's Marine Biology Section in 2018 to tag and monitor Ormers, and surveys were conducted in 2021, to get a rough population estimate.

Minimum total Ormer population surveys were conducted by the GBRC in 2021. They measured the number of rocks turned; if Ormers were present; if Ormers were big enough to be harvested; and the size of the Ormers. They also took records of catches from local people, with the average catch being 21 Ormers (GBRC, 2021b). This research aimed to provide a baseline for minimum Ormer population numbers, with the hope that it can be built on in future to provide a reliable estimate of population size.

Minimum Ormer Population:

6,949

Ormers! (GBRC, 2021b)

However,
in 1965, during one low tide, nearly
31,000

Ormers were gathered.

2 years later, it was estimated

200,000

were gathered over the whole season.
(Miller, 2021)

A lack of data means we do not know the true population numbers. It is unknown if restrictions are allowing for the sustainable collection of Ormers, as surveying is not being undertaken to determine this. Although juveniles are present, we do not know if recruitment is sufficient to replace the Ormers being gathered. Evidence is needed to show that the restrictions are having a positive effect and allowing the population to be sustainable.

6.10.2 Other Marine Molluscs

Cuttlefish, squids, and scallops are some molluscs that are harvested in Guernsey for human consumption. These species are found in coastal waters and are also important food sources for dolphins, sharks, seals and seabirds. Scallops are found on sandy sea beds and are filter feeders. They

are preyed on by crabs, lobsters, sea stars and other fish. Cuttlefish and squids have seen a reduction in the number caught in local waters (see Figure 46) whereas scallops have increased in the number landed per year (see Figure 47). The amount caught is linked with demand and therefore level of fishing effort, and is not necessarily due to a decline in the populations of those species, therefore more data is needed to ensure that the species are being fished sustainably.

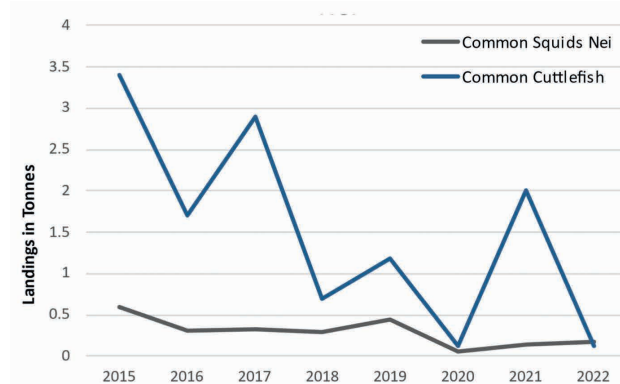


Figure 46 Annual landings of Common Cuttlefish (*Sepia officinalis*) and Common Squid (*Loligo vulgaris*) (Guernsey Sea Fisheries, 2023)

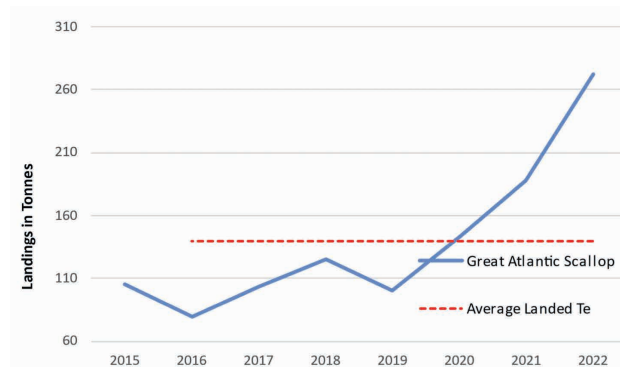


Figure 47 Annual landings of Great Atlantic Scallops (*Pecten maximus*) (Guernsey Sea Fisheries, 2023)

Pacific Oysters (*Crassostrea gigas*) are grown in both Guernsey and Herm for human consumption. This is not a native species, and although they are contained within mesh bags when placed in the low intertidal zone for the growth period, individuals have been known to escape into the wider natural environment. However, there is no known established population of Pacific Oyster in the wild locally.

There are numerous molluscs present in Guernsey and Herm's marine environment, including many that are not harvested for human consumption. Little information is available on the health of our marine mollusc populations, however projects like Seasearch, run in Guernsey by La Société Guernesiaise, gathers information on marine wildlife and habitats through the participation of volunteer divers and snorkellers. This is an important citizen science project as it allows for the collection of data where little data currently exists.

6.10.3 Threats

- Coastal development
- Commercial and recreational fishing and harvesting
- Increased sea temperatures and ocean acidification due to climate change
- Pollution

See section '7. Drivers of Change' for more information.



Green Ormer
(*Haliotis tuberculata*)
Tim Harvey

7. Drivers of Change

It is important to understand the causes and rate of change in the natural environment to be able to understand how we can manage and mitigate the negative impacts and promote the positive impacts of those changes. Various factors will drive change directly and indirectly and can be generated naturally or by human activities.

Decisions can be made at the individual, community, business, and government level to influence drivers of change, although the distinction between these levels can be difficult to identify. This report has identified the primary threats, also known as pressures, to the state of our habitats and species, and this chapter delves further into the detail of what is driving those threats. The interaction of multiple drivers of change can in itself be a driver and is a cumulative effect on the resilience of our natural environment. The cumulative effect of these pressures overlaps and compound one another, which can lead to more pronounced declines. As such, the drivers of change discussed in this report should not be considered in isolation. These effects are due to changes from the past, present and foreseeable future actions and are considered to be the most urgent challenges to our habitats and species. By increasing our understanding of drivers of change, alongside improved understanding of our species and habitats, we can introduce additional, targeted conservation measures to try and address the imbalance brought about by negative anthropogenic impacts.

7.1 Climate change

Climate change is one of the most significant threats to biodiversity globally. The evidence suggests that it is having an impact now, however the impacts are likely to increase significantly over time, increasing the level of threat that our wildlife will face in the future. Some species will be able to adapt, while others will not and are therefore likely to decline without human intervention.

Climate change pressures include:

- **Increasing air temperatures, leading to longer and more frequent heatwave events, affecting the availability of resources which may lead to increased species mortality and extinction.**
- **Increasing sea temperatures, leading to a shift in range for many species (or the loss of species which are unable to expand their range), changing the type and availability of ecosystem services and affecting the balance of the marine ecosystem.**
- **Sea level rise, leading to coastal squeeze and changing our intertidal areas, reducing our coastal habitats for wildlife.**
- **Increased extreme weather events such as storms, damaging the natural environment and affecting the ecosystem services provided, and increased mass species mortality events such as seabirds.**
- **Ocean acidification affects species that use calcium to build their shells and skeletons such as oysters and coral and may lead to population declines.**
- **Increased spread of invasive species, which are able to adapt much quicker or exploit changes in climate, out-competing natives and altering environments.**
- **Changes in season, such as spring commencing earlier, impacting the lifecycles of species unable to adapt.**

7.1.1 Sea Temperature

Guernsey Sea Fisheries have been taking sea water temperature samples since the 1980s. Cold winters in 1986/1987 and 1991 accounted for a dip in sea temperatures. General warming was evidenced throughout

the 1990's and early 2000's with some dips in the 2010's due to colder winters and cooler summers. The data collected evidences that there has been a statistically significant trend of warming sea temperatures since 1980 (see Figure 48) (Alderney Wildlife Trust, 2022).

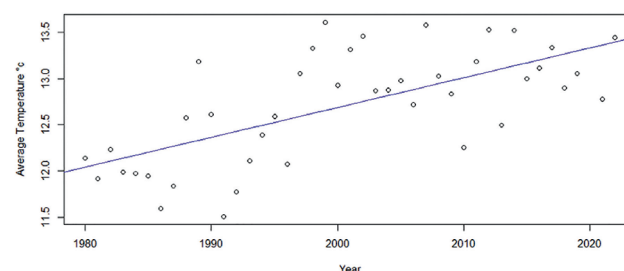


Figure 48 Average annual sea surface temperature (°C) from 1980-2022 recorded within Guernsey's terrestrial waters (E. Coule, personal communication, 2024; Guernsey Sea Fisheries, 2024b). Note: data from 2020 was excluded from the analysis due to lack of data points.

The 2012 average temperature was one of the warmest on record (Guernsey Sea Fisheries, 2012), with early hot weather in March shifting the spring and summer warming to earlier in the season. The effect of changing sea temperature on fish populations is difficult to predict or quantify but is one of many factors that can be linked to changes in populations and movements of fish stocks (see section '6.8.2 Other Marine Fish').

Changes in sea temperature can also affect food webs and weather patterns by changing water currents. Ocean currents move heat around the world, with density affecting the movement. Colder water is denser than warm water and will sink, which helps maintain this circulatory system. Rising sea temperatures lead to more warm water which does not sink as effectively, changing the balance of ocean currents. This could alter rainfall patterns, affecting the water cycle causing more droughts (NASA Science Editorial Team, 2023). More research is being conducted globally to better predict current changes and the impact of these changes. Changes in ocean currents will also affect phytoplankton species, a primary producer. Primary production is the rate at which photosynthesis converts energy to organic substances, and therefore forms the foundation of the marine food web.

If sea temperature continues to increase as predicted, the ranges of cold water species may shift to waters that better support their optimal thermal habitat (Smale, 2020). A change in species ranges will affect prey distribution and therefore have impacts on the distribution of associated predator species. Wildlife may struggle to adapt to reduced availability of prey, which will then affect breeding success and survival of juveniles.

7.1.2 Seasonal Changes

The impacts of climate change include the alteration of the seasonal calendar. Plants may flower earlier before bees are ready to feed on pollen, meaning that some plants may not be pollinated, and pollinators would have reduced food resources. Additionally, seasonal changes are affecting birds. Blue Tits (*Cyanistes caeruleus*) have evolved to time their breeding cycle to match peak caterpillar abundance,



however as temperatures warm, caterpillars are hatching earlier. If Blue Tits are unable to adapt their breeding cycle to this change, they miss peak availability, resulting in less food for chicks, reducing breeding success. This also affects migratory birds whose passage is synchronised to match peak food availability. Mismatches in season shifts could impact survival rates. Some species may be able to adapt to these seasonal changes over time, and so the pace of change is also an important factor.

7.1.3 Ocean Acidification

Ocean acidification is another factor caused by climate change. When more CO₂ is absorbed by the sea, the pH of the water decreases, reducing the availability of carbonate ions. This has wide impacts including making it difficult for molluscs to grow their shells and disrupting food webs by making these species more vulnerable to predators (Fabry et al., 2008) (refer to section '6.10 Marine Molluscs'). A 2023 study on the impacts of ocean acidification on seaweed found that acidified seaweed broke down more easily and had a higher rate of mortality (Kinnby et al., 2023). This could lead to a decrease in seaweed coverage, impacting organisms that use this habitat for food and shelter (see section '5.6.4 Seaweeds').

7.2 Invasive Non-native Species

Invasive non-native species are plants or animals which have been introduced to an area by humans in which they are then able to thrive, to the detriment of local species, the economy or public health. Invasives are a considerable threat to biodiversity and can cause major problems on islands. Humans spread non-native species through the global movement of goods and people all over the world, resulting in the intentional and unintentional introduction of many species which can have wide-ranging consequences. Invasive non-native species may out-compete local species, predate natives including eggs and young, bring in disease, hybridise with natives, cause habitat alteration and degradation, or negatively alter the balance of ecosystems (University of Plymouth, 2024). Many invasive non-native species can reproduce rapidly and/or are generalists which is the key to their quick spread and establishment. A recent study found rats have been introduced to 78% of islands (Spatz et al., 2017), where they affect native species through direct predation of eggs and young of many species.

However, being an island can make the management of terrestrial invasive non-native species feasible. The RSPB has demonstrated that rat eradication can take place, with the success of their eradication on the Isle of Lundy and 2 of the Isles of Scilly (RSPB England, 2021). Furthermore, over 1,200 invasive non-native mammal eradications have been attempted on islands worldwide, of which 85% have been successful (Holmes et al., 2019). Marine invasive non-native species are spreading more rapidly due to global movement of vessels which increases the level of connectivity between geographic marine areas, therefore increasing the risk via hull fouling and discharge of ballast water. As Guernsey and Herm are situated so close to the English Channel, which has high volumes of maritime activity, it is more vulnerable to translocation of invasive marine species, which are much more difficult to address once present compared to terrestrial invasives. Early detection is essential to ensure a rapid response to achieve eradication in the marine environment. However detection requires holistic surveying on an ongoing basis which is resource intensive. Globally, eradication of marine invasives has been very rarely achieved with success down to early detection and rapid response (Giakoumi et al., 2019).

It is considered to be more effective, in terms of cost, level of effort and success, to prevent the establishment of invasive species, however this requires strict biosecurity controls to

be implemented. Australia and New Zealand have very strict biosecurity measures in place to prevent the arrival of non-native invasive wildlife which have shown to be relatively successful, particularly in relation to terrestrial controls. A robust and well implemented biosecurity plan for the Channel Islands would help to ensure a comprehensive and effective approach to the prevention and management of invasive non-native species.

The States of Guernsey's INNS Action Plan (2021) prioritises prevention, surveillance and rapid response of invasive non-native species (INNS) to prevent establishment of new species. ACLMS has already undertaken a Horizon Scanning exercise which identified those species not yet established in the wild which pose a high risk. Ongoing pathways analysis will be used to inform the production of biosecurity plans. The first of which – a marine biosecurity plan – has been prioritised within the Government Work Plan and will be delivered by the end of 2024.

The most recent invasive non-native species to colonise Guernsey was found in 2023 – Carpet Sea Squirt (*Didemnum vexillum*). There appears to have been a spike in the number of invasives colonising in the most recent decade. This increase may be due to invasion lag, with invasives that are already established only just becoming a problem.



Sour Fig
Angela Salmon

7.2.1 Sour Fig (*Carpobrotus edulis*)

The earliest record of Sour Fig in Guernsey was in 1886. Native to South Africa, Sour Fig was originally planted in domestic gardens but became established more widely due to its ability to spread prolifically. It is now a threat to the biodiversity of our coastal habitats. Sour Fig increased in area by 123% from when it was first surveyed in the 2010 Habitat Survey (see Figure 49) (Hayward & Scopes, 2019a), despite successful attempts to remove it from accessible coastal areas. The presence of Sour Fig creates extensive mats which smother native plant species, creating a monoculture and modifies soil properties, hindering native flora re-establishment. Due to the lack of cold winters and heavy frosts, as a consequence of climate change, the plant has suffered little weather damage or dieback, and this has helped it to spread. The spread of Sour Fig has caused declines in many specialist native plants and animals that are reliant on coastal grassland and heathland.

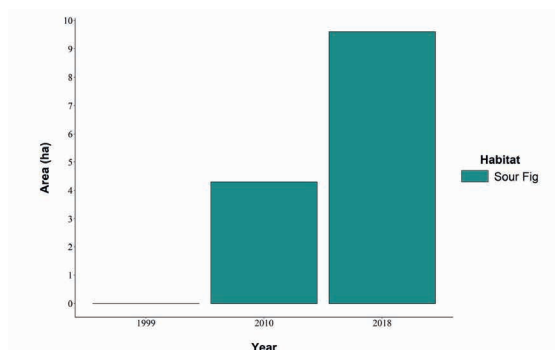


Figure 49 Amount of Sour Fig found on Guernsey during the 2010 and 2018 Habitat Surveys (Hayward & Scopes, 2019b) Note: Sour Fig was first introduced as a category in 2010.

The spread of Sour Fig has been mapped in Guernsey (see Figure 50 to Figure 52). Removal of large areas of this invasive non-native species in Guernsey is being conducted by the Guernsey Conservation Volunteers, as well as other organisations. Since the pilot project at Fort Pezeries in 2008, the Guernsey Conservation Volunteers have removed more than 250 tonnes of Sour Fig across more than 20 sites (A. Salmon, personal communication, 2024). La Société Guernesiaise Botany Section conducted a survey on an area cleared of Sour Fig at Les Tielles to monitor the natural restoration of native plant species. 69 different native species were found growing in this cleared area (Mahieux, 2023). The removal of Sour Fig at Les Tielles created space for Black-backed Meadow Ant nests as well as maintaining a breeding area for Glanville Fritillary Butterflies. Ribwort Plantain (*Plantago lanceolata*) is an important food source for Glanville Fritillary Caterpillars and growth of this plant has spread due to the removal of Sour Fig (see section '6.3.2 Butterflies').

Sour Fig is growing rapidly on many areas of the south coast cliffs (see Figure 52); these areas are relatively inaccessible to volunteers which means that clearing efforts have not been possible.

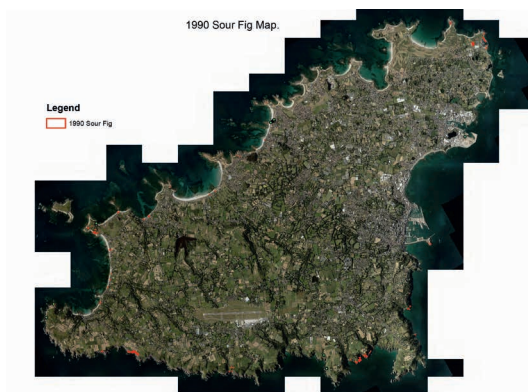


Figure 50 Map of Sour Fig 1990 (J. Henney, personal communication, 2024a) © States of Guernsey

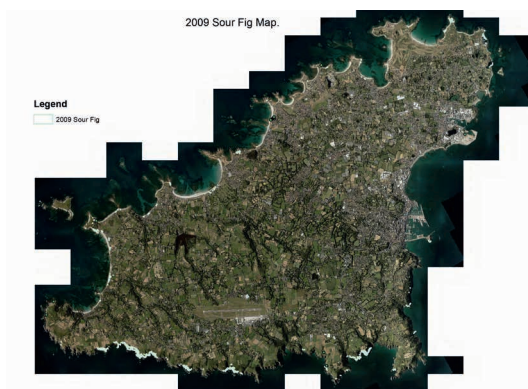


Figure 51 Map of Sour Fig 2009 (J. Henney, personal communication, 2024a) © States of Guernsey

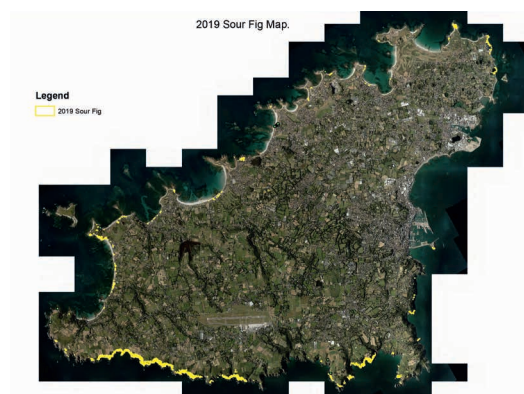


Figure 52 Map of Sour Fig 2019 (J. Henney, personal communication, 2024a) © States of Guernsey

7.2.2 Asian Hornets (*Vespa velutina*)

Asian Hornets were first seen in Guernsey in 2017 (F. Russell, 2022a). They present a threat to public health and are voracious predators of our native invertebrates. It was predicted that, in a 'do nothing' scenario, 650 nests per year could become established in Guernsey by 2030. The economic cost of controlling Asian Hornets in the UK, were they to become established, is estimated at roughly £7.1million. The Asian Hornet Strategy was implemented in Guernsey and Herm in 2019 by the States of Guernsey to prevent this species establishing. The Strategy involves catching arrival queens in the spring, through a strategic trapping programme, and then tracking and destroying secondary nests when they are constructed over the summer months (see Figure 53). As nests are destroyed in summer and autumn, minimal numbers of new queens survive to hibernate, meaning less chance of new nests being established the following year (F. Russell, 2022b). There appears to be no habitat preference with nests widespread in Guernsey (F. Russell, 2022a).



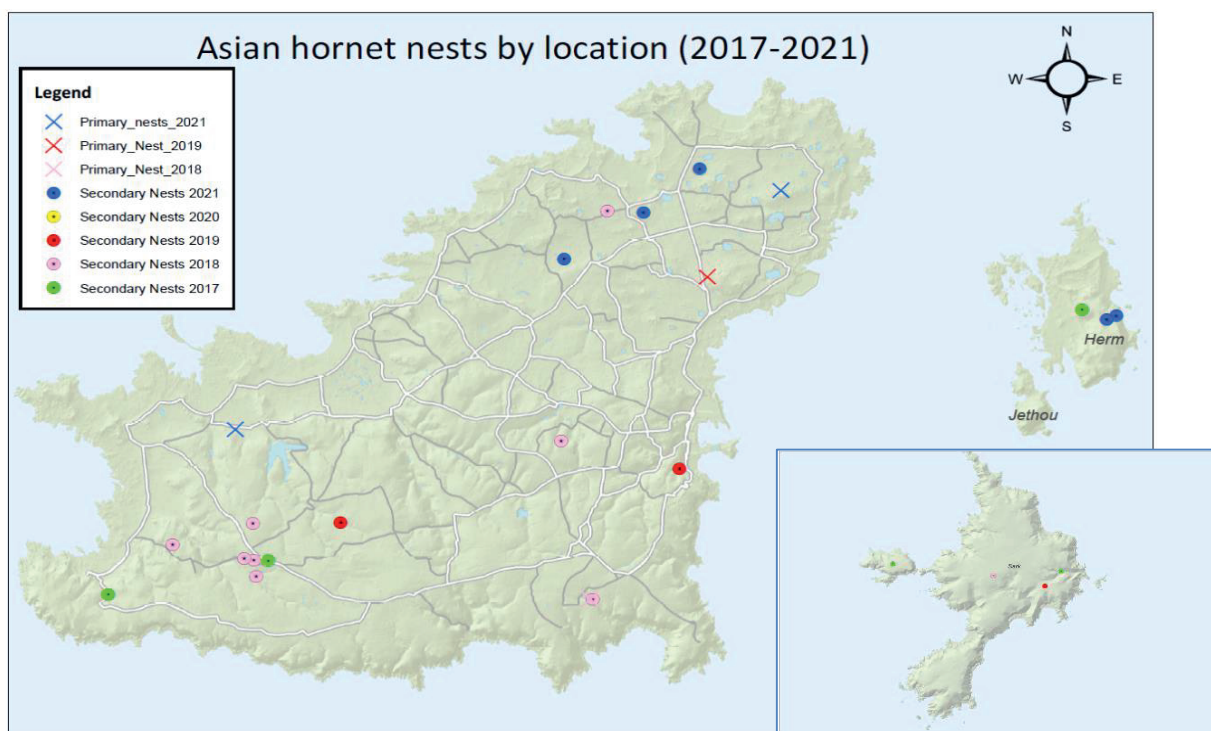


Figure 53 Location of destroyed primary and secondary nests 2017-2021 (F. Russell, 2022a)

The summer before the implementation of the Asian Hornet Strategy in 2019, 8 nests were located by the States of Guernsey Bee Inspector. Following this, the average number of nests destroyed by the Asian Hornet Strategy between 2019 and 2021 reduced to 1.6 per year (see Table 25). This demonstrates that the strategy of catching queens in the spring appears to be working and the population of Asian Hornets is being eradicated each year, or at least, kept at very low levels.

Table 25 Confirmed trapped queens and destroyed nests in Guernsey (F. Russell, 2022b, 2024)

	2017	2018	2019	2020	2021	2022	2023
Queens Caught	0	4	10	3	8	11	38
Primary Nests	0	0	1	0	2	2	
Secondary Nests	2	8	2	0	3	2	14
Total Nests Destroyed	2	8	3	0	5	4	

After 7 years of control, populations are maintaining at low levels, however sudden spikes in numbers, such as that seen in 2023, do occur (see Figure 54). There was an unprecedented rise in numbers of queens captured and nests destroyed in 2023. This may be due to the favourable E-SE winds that brought in new arrivals from the continent (F. Russell, 2024). It remains to be seen if this increase reflects a substantial trend or is just an anomaly.

Based on the available data, the Asian Hornet Strategy in Guernsey appears to be successful each year. The Strategy sets a target that the number of established secondary nests should not exceed 10 per year which, if excluding the unprecedented totals from 2023, has so far been achieved (see Table 25) (F. Russell, 2022a). Ongoing control will always

be required due to invasion of queens every spring from neighbouring established populations. Therefore, the aim of the Strategy is to prevent the establishment of Asian Hornets each year, which is considered the best method currently.

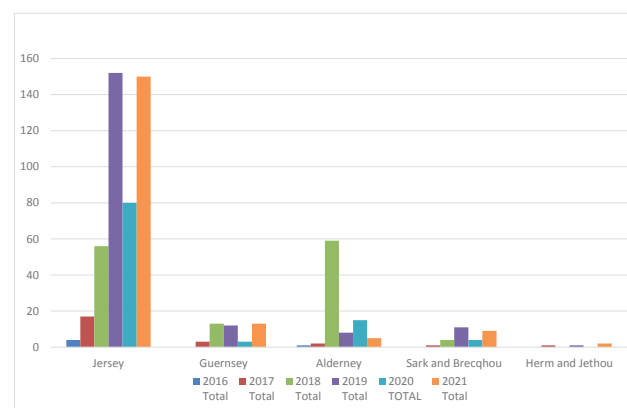


Figure 54 Numbers of Asian Hornets recorded in the Channel Islands 2016-2023 (F. Russell, 2024)

7.3 Development and Land Use Change

Being an island means that lack of land availability creates a tension between development and providing space for nature. There is a potential for further declines in valuable habitat if development on the green spaces and in the coastal zone in Guernsey continues without thorough consideration of the biodiversity impacts.

7.3.1 Terrestrial

Land-based development includes new builds, re-builds, demolition, restorations, land clearance and land drainage. Many new buildings have less space available between and within external features of buildings for species to utilise. This reduces available space for bats to roost, and for Swifts and House Martins to nest. These adjustments are not beneficial for wildlife and exacerbate other pressures, such as lack of foraging habitat. Curtilages surrounding

developments often contain manicured lawns, which support very few species, often referred to as the equivalent of a wildlife desert, with few places to hide, nest or forage. Hard-standing replaces habitat that could be used by wildlife, but are also impermeable, affecting the drainage of land. Unnecessary illumination of and around buildings disrupts the behaviour of nocturnal wildlife, affecting their ability to hunt, breed, migrate and roost (see section '7.4.3.3 Light Pollution').

Bats may roost in built structures, but they will forage in fields and along hedgerows so the loss of suitable spaces within urban areas as well as natural habitats has a knock-on effect (see section '6.1.3 Bats'). The use of brownfield sites, such as old hotels or former industrial areas, for development in Guernsey would have a lower impact on biodiversity than development on more natural areas, or greenfield sites, which have a higher ecological value. This is subject to the appropriate surveys and mitigation strategies being carried out, as these areas can still be good habitat for bats and nesting birds.

Development can lead to:

- **Habitat fragmentation, which reduces habitat connectivity and can prevent species from travelling between their feeding, nesting and breeding sites. It could lead to genetic isolation, with signs of possible inbreeding found in Guernsey Voles (Scopes, 2018).**
- **Direct loss of valuable habitat, such as species-rich habitats which are declining in Guernsey, negatively affecting our wildlife.**
- **Loss of breeding and nesting sites when hedges are removed and replaced with fencing.**
- **Un-wildlife friendly gardens, increases in surfaces such as paving/decking/artificial grass can lessen the biodiversity potential of our gardens. Poor management may also make gardens inhospitable.**

7.3.2 Marine

Marine and coastal development in Guernsey and Herm to date has typically been for energy resilience, land reclamation, and coastal infrastructure such as coastal defences, discharge pipes, and harbour areas and anchorages. Recent developments in Guernsey and Herm include:

- Repair/replacement of the underwater electricity cable
- Replacement sewerage outfall pipes
- Land reclamation at Longue Hougue.

Marine and coastal development may result in habitat degradation and loss, disturbance of sensitive habitats and species, and pollution. Coastal development could also lead to coastal squeeze of our intertidal habitats such as dunes and saltmarsh (see section '5.5 State of Coastal Habitats'). Coastal squeeze is when anthropogenic structures such as sea walls prevent the natural transgression of habitats inland, causing the loss or degradation of the habitat (Environment Agency, 2021). This is particularly an issue when considering sea level rise because of climate change, which will exacerbate coastal squeeze. The process of development can include damaging activities, such as dredging which directly damages the natural environment through habitat destruction, but which can also cause sedimentation, smothering neighbouring habitats. The resultant increased turbidity in the water column can also reduce the ability of seaweeds and Eelgrasses to photosynthesise, and reduces the efficiencies of filter feeders, impacting the ability of our marine species to grow, feed, and reproduce.

A lack of data and surveying within the marine environment means we cannot accurately identify which habitats and species are affected and how. Improving our understanding of our marine environment will help ensure that Priority and other vulnerable marine habitats and species are protected from development. Additionally, the availability of a Marine Spatial Plan locally will help us to better understand how people use and value the marine environment and facilitate a sustainable balance of interactions and ecosystem needs.

7.3.3 Protection against development

Existing mitigation is linked with the Land Planning and Development (Guernsey) Law, 2005 which aims "to preserve and promote biological diversity". This legislation led to the 2016 Island Development Plan (IDP), which includes protection for Sites of Special Significance (SSS), and consideration for biodiversity in Areas of Biodiversity Importance (ABI). Other developments can provision for terrestrial biodiversity, through appropriate landscaping and protection of trees. Conditions relating to biodiversity are regularly attached to permissions when granted, however they have to be compatible with planning policies. Regard for other legislation can be provided through advisory notes, although these are not enforceable through the Planning service and require oversight from the specific responsible authority.

The Land and Planning Development (Guernsey) Law, 2005, our current planning legislation, extends to the foreshore, however it does not apply to the majority of the marine environment. Installation of infrastructure on the sea bed requires a licence under The Food and Environment Protection Act 1985 (Guernsey) Order 1987 (FEPA) and the associated Amendment Order 1997 which includes environmental considerations. Large coastal developments and associated activities such as land reclamation and dredging, require an Environmental Impact Assessment (EIA) to assess and mitigate environmental impacts. Generally, our marine habitats are not typically protected beyond where they provide direct commercial gain. Even where legal protections exist, difficulties in surveying and monitoring and a lack of comparable data make it difficult to fully consider and account for all potential environmental impacts.

The designation of SSS does not prevent development being carried out. However there are constraints on development that might harm the special interest of a SSS and the definition of 'development' is expanded within SSS to include activities which may affect the 'special interest' of the site, including significant vegetation clearance or disturbance of the ground. Therefore, works can only be carried out with permission from the Development and Planning Authority. In contrast, the classification of an ABI merely designated areas of Guernsey which are relatively more beneficial to wildlife, and policies require that developments proposed in these areas take account of biodiversity or compensate for any acceptable losses.

Certain developments, including those over 1 hectare in size, may require an Environmental Impact Assessment (EIA) to be undertaken, and an Environmental Statement produced, in line with the Land Planning and Development (Environmental Impact Assessment) Ordinance, 2007. The Environmental Statement will summarise the outcomes of the EIA and will identify measures to avoid, mitigate, restore or offset impacts. Findings are then reviewed by the Development and Planning Authority and considered in the planning application determination. Any decision notice and associated conditions will then ensure that developers implement the appropriate mitigation measures outlined in the Environmental Statement. However, this may not always lead to the best outcomes for our natural environment, as EIAs produced for developments in Guernsey are not required to be conducted by a suitably qualified ecologist and so can often be poorly evidenced and lead to inaccurate



conclusions regarding impacts and appropriate mitigations. EIAs should consider the ecological impact of a development, with the applicants utilising available information where relevant and/or conducting ecological surveys where no data is available. Ecological surveys are designed to detect evidence of important species and habitats in areas for development and assess the significance of potential impacts. The Animal Welfare (Guernsey) Ordinance, 2012 prevents the known killing, injuring and disturbance of wild animals, and the damage or destruction of nests, roosts and burrows (States of Guernsey, 2012). It also requires that reasonable precautions are taken to avoid offence, with only genuine accidents, such as where the consequences could not be foreseen, being exempt under the law. Therefore, any development should make sure appropriate mitigation measures are then carried out to prevent harm to wildlife.

Improvements have been made in planning regulations recently regarding domestic gardens⁸. Since 2021, the Development and Planning Authority has required that all domestic curtilage conversions from agricultural land must demonstrate biodiversity enhancement after a change of use. This requirement is in line with the Strategy for Nature which was adopted as Supplementary Planning Guidance in 2020 (States of Guernsey, 2019b). However, there is insufficient monitoring to confirm whether the adoption of this Supplementary Planning Guidance is having a positive effect. The extent of private land managed under effective conservation measures is an indicator for increasing the awareness, understanding and support for nature in the States of Guernsey 2020 Strategy for Nature.

Guernsey and Herm's regulations which include consideration of biodiversity are not sufficiently robust to enable holistic and comprehensive protection and enhancement of our natural environment. The Habitat Surveys (Hayward & Scopes, 2019a; Henney, 2010) and other methods of information gathering summarised in this report have demonstrated that our natural, species-rich environments, and our Priority Habitats and Species are generally declining, often due to development. More data on our natural environment is essential to build the evidence base needed for informed decisions and the implementation of robust wildlife legislation.

7.4 Pollution

Pollution is classed as the introduction of harmful materials (pollutants) into the environment. Some pollutants may be classed as natural, such as volcanic ash. However, the majority of pollutants in Guernsey and Herm come from anthropogenic sources. Pollution is a worldwide pressure, with chemicals used thousands of kilometres away being found in the blood of animals native to the Arctic and Antarctic (WWF, 2024). The Environmental Pollution (Guernsey) Law, 2004 splits environmental pollution into three categories: water, air and land. This law aims to preserve and enhance the environment by limiting the input of pollution. This is achieved by requiring licensing and imposing restrictions on disposal of waste, preventing discharge of pollutants to water bodies, and restricting emissions to the air (States of Guernsey, 2004).

7.4.1 Water Pollution

7.4.1.1 Chemical and Nutrient Pollution

In Guernsey and Herm, chemical and nutrient pollution consists mainly of fertiliser and pesticide run-off, antifoul, bleach and detergents, and sewage (Fitch, 2020). This pollution negatively affects our soils and aquatic environments. Run-off from fertiliser and herbicides can reduce water quality and allow dominant species to out-compete more sensitive species, changing the balance of ecosystems. Polluting discharges into marine and freshwater environments, such

as high levels of nitrate run-off, can cause algal blooms which block sunlight needed by organisms within the water, and reduce oxygen levels within water bodies.

Impacts of Chemical and Nutrient Pollution:

- **Contamination of habitats with chemicals**, causing reductions in biodiversity. Nettles and docks will dominate as most wildflowers need nutrient-poor soils.
- **Ocean acidification** caused by increased CO₂ absorption in our oceans, makes it more difficult for species that use carbonate ions to build their shells and exoskeletons.
- **Toxic chemicals** damage nervous systems, immune systems and reproductive systems in animals. They cause hormonal imbalances, disease and disrupt natural behaviours.
- **Algal blooms** as a result of excess nitrogen and phosphorus which block sunlight to photosynthesising organisms and can create dead zones by removing oxygen from an aquatic ecosystem.

Guernsey Water has been collecting water pollution data information from their sites and have found that overall pesticide levels island-wide increased by 65% between 2019 and 2021. This could possibly be due to flushing of glyphosate from urban environments into streams following rainfall (Guernsey Water, 2020) and run-off from sewage and agricultural use.

Case Study: Glyphosate

Regular sampling by Guernsey Water for the pesticide glyphosate began in 2015 (Guernsey Water, 2020). This has discovered that glyphosate is present in our streams and reservoirs and is a risk to human health, therefore Guernsey Water uses a mix of source selection, blending and treatment to ensure compliance with drinking water standards. It remains a risk to the environment as glyphosate is toxic to wildlife and run-off can also impact freshwater species. Glyphosate is toxic to many fish species, affecting behaviour such as foraging, escaping and breeding, reducing survival rates (Lopes et al., 2022). It will also impact the early stages of amphibian and aquatic invertebrate development, reducing survival which will impact population numbers (Brühl et al., 2013) (see section '6.2 Amphibians and Reptiles'). This pesticide is toxic to plants and algae as it inhibits chlorophyll synthesis (Gergely, 2023). As plants are the primary producers of this environment, this will affect species higher in the food web, potentially altering the entire ecosystem. Under the Poisonous Substances (Guernsey) Law, 1994 and the Control of Poisonous Substances (Guernsey) Regulations 2014, glyphosate has been banned for amateur use by individuals, but is still available for holders of a commercial licence (States of Guernsey, 2022a).

Pesticides are also a major factor in the decline of pollinators. Some pesticides have been found to disrupt navigation and memory in bees as well as impairing reproduction. It also affects their ability to learn which is an important part of their foraging behaviours (see section '6.3.4.3 Bees'). Bees cannot taste pesticides present on flowers so are unable to avoid contaminated nectar. Declines in insect populations will have a knock-on effect on the species that depend on this food source. A local scientist in Guernsey has received funding from the Natural Environment Research Council to study the impact of reduced pesticide use on the abundance and diversity of pollinators in the Channel Islands. Findings may provide evidence to support further limitations on the use of harmful pesticides in Guernsey and Herm.

⁸ <https://www.gov.gg/article/185196/New-biodiversity-requirements-for-domestic-curtilage-planning-applications-from-September>

7.4.2 Air Pollution

Air pollution consists of chemicals in the air that are harmful to the health of humans, plants and animals. Examples include CO₂ pollution from bonfires and burning rubbish, although there are restrictions on these activities in Guernsey and Herm (States of Guernsey, 2004). Air pollution can impact sensitive plants and trees and water bodies.

The Office of Environmental Health and Pollution Regulation have undertaken ambient air quality monitoring in Guernsey since 1992⁹. 9 pollutants are monitored, an increase from 5 as a result of the Environmental Pollution (Air Pollution) Ordinance, 2019: nitrogen dioxide (NO₂), nitric oxide (NO_x), particulate matter (PM 1, 2.5 and 10), sulphur dioxide (SO₂), total suspended particulates (TSP), oxides of nitrogen (NO_xasNO₂) and ozone (O₃). However, the monitoring is in relation to human health rather than the health of the natural environment. Little information is available regarding the impacts of air pollution in Guernsey and Herm's natural environment, and there are no acceptable thresholds in place, above which action is triggered.

7.4.3 Land Pollution

7.4.3.1 Plastic Pollution

Physical pollution mainly consists of material discarded by humans, whether intentionally or accidentally. Plastics in particular, are having a major impact on wildlife, due to their ability to persist in the environment for many decades. Around 300 million tonnes of plastic are produced every year (Lindwall, 2020). Only 20% of the 8.3 billion tons of plastic produced globally since the 1950s has been burned or recycled (University of Georgia, 2017). 80% has therefore ended up in the environment, including in landfills. It is anticipated that these plastics will cause many problems in the future because they take a long time to degrade; anywhere between 20-500 years (United Nations, 2021). Plastics never fully disappear, they just become smaller and smaller, and have even been found at the bottom of the Mariana Trench, the deepest oceanic trench on Earth. Small pieces of plastic have been found in zooplankton, meaning this plastic will then be transported through the food web, eventually reaching humans (Chiba et al., 2018). Toxins associated with plastics can bioaccumulate in species through their feeding behaviours, leading to hormonal and behavioural changes. 80% of marine plastic enters oceans via rivers and coastlines, while 20% comes from marine

sources such as fishing gear. Ghost fishing gear makes up 10% of global marine litter (Clean Earth Trust, 2022b; Nicolas, 2020) and can cause serious issues for wildlife.

Effects of plastic pollution on wildlife:

- **Entanglement** of species causing injuries. Entanglement restricts movement and behaviour, including feeding which impacts survival.
- **Ingestion** of plastic causes digestive issues, which may lead to choking and starvation.
- **Habitat degradation** alters and damages habitats. Can smother habitats and release toxins into the environment.
- **Chemical bioaccumulation** through harmful chemicals in microplastics can cause infertility, metabolic changes, stress and hormone disruption in animals.

The Clean Earth Trust has been collecting marine litter data from beach cleans since 2021. So far, 38 different beaches have been cleaned in Guernsey and Herm (Clean Earth Trust, 2022b). Sources of marine litter in Guernsey are shown in Figure 55.

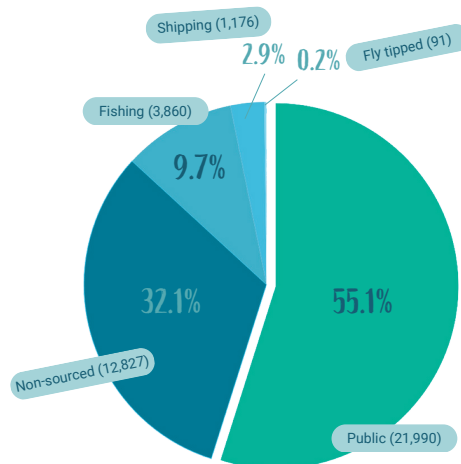


Figure 55 Estimated sources of marine litter in Guernsey as of 2022 (Clean Earth Trust, 2022)



Cigarette Butts case study (Clean Earth Trust, 2022a):

Cigarette ends contain plastic and can take 10 years to biodegrade. They contain harmful chemicals such as arsenic, lead and nicotine which pollute our marine and freshwater environments.

Toxicity causes 50% mortality in freshwater and marine species from as little as dilution of 1 cigarette end per litre of water. Butts are the most littered item globally, with around 4.5 trillion discarded annually. In a survey of litter collected in Guernsey's beaches, the highest number of butts were found at Belle Grève and Pembroke/ L'Ancrese in 2021 and 2022, with 1,021 and 1,763 butts respectively. Butts on the beaches may be due to beachgoers littering directly, or due to land-based littering making its way to beaches via Guernsey's surface water drainage system. Cigarette littering can incur a £70 fine under the Refuse Disposal Ordinance, 1959 and the Offences (Fixed Penalties) (Guernsey) Law, 2009.

⁹ Air Pollution in Guernsey (ricardo-aea.com)



Over time, plastics break down into microplastics, synthetic microfibrils, toxic chemicals, and micropollutants. It is estimated that there are 5.25 trillion pieces of plastic in our oceans (Eriksen et al., 2014). Predictions show that around 710 million tonnes of plastic are likely to have entered the natural environment between 2016 and 2040 (Lau et al., 2020). Studies have found microplastics, defined as <5mm in size, in sand, soil, rain, snow and biological organisms including seabirds (Ziani et al., 2023). There has been very little research in the Channel Islands on microplastics. One Jersey study conducted in 2018 found microplastics on every single beach and levels of pollution similar to the UK and Europe (Goovaerts, 2023). A study conducted in Guernsey in 2022 found microplastics in all 25 samples of sand taken from 5 beaches, with the highest overall abundance found at Bordeaux harbour. 3 of the most polluted sites were found in the north of the island, suggesting plastic pollution may be more severe in these areas (Goovaerts, 2023).

Further research into plastic pollution in Guernsey and Herm could identify sources and provide information on temporal and geographical variabilities. This could help direct measures to reduce plastic pollution. Based on information available elsewhere in the world, and the small amount of available data locally, plastic pollution has the potential to be a problem in Guernsey and Herm which could negatively impact our natural environment.

There are many alternatives to plastic becoming available on the market in areas such as food packaging. One of the major sources of plastic pollution is disposable plastics. The Clean Earth Trust is campaigning for a ban on single-use plastics, such as plastic cutlery, cotton buds and plastic carrier bags.

Other Crown Dependencies and the UK have carried out public consultations and then banned single-use plastics: England, Scotland, Jersey and Isle of Man have approved bans. As of July 2021, EU Member States are banned from selling single-use plastics and polystyrene food and beverage containers (European Commission, 2024).

This issue has been raised in Guernsey, but little progress has been made to date. Bans in neighbouring jurisdictions will limit Guernsey's access to such products. Implementing restrictions on single-use plastics would help reduce pollution of disposable plastic and cigarette butts, which are 2 of the top 5 most discarded litter items in Guernsey.

Ultimately, international cooperation is needed due to the mobile nature of plastic pollution. All countries need to reduce the amount of waste entering our environments and manage what is already there.

7.4.3.3 Light Pollution

The Environmental Pollution (Guernsey) Law, 2004 prohibits the emission of energy that causes serious pollution to the environment, however this has yet to be enacted (States of Guernsey, 2004).

Light is a form of energy and has become increasingly detrimental to nocturnal wildlife in recent years. Light pollution is directly caused by humans, through the use of streetlights, security lighting on buildings, and lamps used to illuminate buildings such as houses and churches. Even leaving your curtains open after dark with lights on inside creates light pollution. While some of these lights are necessary, the theme of lighting up landmarks and homes at night is detrimental to our wildlife. The impact of light pollution in Guernsey is considered to be relatively low. This is due to many of our streetlights remaining as old-fashioned, warmer coloured lights rather than being upgraded to new LED lighting (see Figure 56).

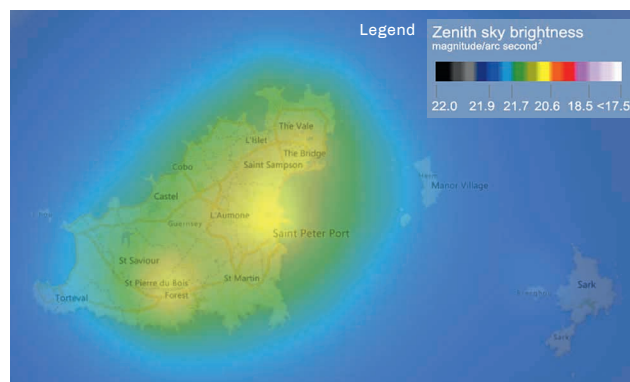


Figure 56 Light Pollution Map of Guernsey (Light Pollution Map, ND)

Species affected:

Light pollution can disrupt both nocturnal and diurnal animals. It affects the natural rhythms of species by blurring the boundaries of day and night, impacting species which have adapted to conduct behaviours in the dark. For example, migratory birds depend on cues from properly timed seasonal schedules; artificial lighting may cause them to migrate too early or too late (DarkSky International, 2024). This may have a knock-on effect on nesting, foraging and other behaviour, as the birds miss their ideal climate conditions. Bats will leave the roost to forage at night; artificial lighting causes them to leave roosts much later, reducing the amount of time available to hunt, or prevent them from leaving their roosts at all (Bat Conservation Trust, 2024) (see section '6.1.3 Bats'). Changes in light can lead to diurnal species staying awake longer, negatively affecting their fitness and breeding successes. Artificial light at night will affect hunting techniques and cause exposure to vulnerable species from predators. Light may also act as a physical barrier such as on roads, preventing species from crossing and reducing the amount of habitat available.

A recent study in Guernsey, found that Natterer's and Brown Long-eared Bats will avoid areas with high levels of artificial light at night (Coule, 2022).

Nocturnal insects such as moths will fly around lights, instead of feeding and pollinating plants. This causes them to be predated more easily and may cause them to die of exhaustion from wasted energy (Butterfly Conservation, 2024). Light pollution causes changes in moth life cycles, leading to premature development of pupae into adults. (see section '6.3.1 Moths')

Sark and Herm are examples of dark sky areas with little artificial lighting. Sark has been classed as a 'Dark Sky Island', which means that residents have been recognised for their efforts to reduce light pollution and protect the night sky (DarkSky International, 2015). Guernsey is much darker than many other places in the UK, however light pollution still exists. Most light pollution regulations centre around lights being either a necessity or a nuisance to humans rather than wildlife. The impact of light pollution on wildlife is becoming increasingly recognised. Legislation or policies to control the use of light on private developments and commercial areas, will help to benefit wildlife.

7.4.3.4 Sound Pollution

Underwater noise can have a significant impact on the behaviour of species or, in the case of sensitive species such as cetaceans, can result in permanent injury or death. Underwater noise is created by human activities in the marine environment, such as piling, sonar surveys, boating or jet-skiing. Pollution of audible noise, sonar or vibration may affect marine mammals who use echolocation to hunt (see section '6.7 Marine Mammals'). This could also cause stranding as navigation is affected and disrupts migration,

communication and other behaviours. Prolonged and regular disturbance can cause stress to animals and excessive use of energy, causing a loss of condition. Use of drones can also impact marine wildlife.

The Marine Code of Conduct gives advice on how to prevent disturbance to marine mammals and seabirds³³. The emission of sound pollution can also be prohibited under the Environmental Pollution (Guernsey) Law, 2004, and when enacted could help prevent these wider environmental impacts.

7.5 Commercial and Recreational Fishing and Harvesting

The main commercial fishing industries in Guernsey and Herm are potting for shellfish, demersal trawling for wet fish and dredging for King Scallops, and there are two aquaculture businesses. There are also small communities of shore gatherers who harvest products such as Ormers (see section '6.10.1 Ormers') and intertidal bivalves and a number of recreational anglers and potters. There has been a small reduction in the number of local fishing vessels operating in our waters since 2010 (see Figure 57). There is no robust data currently available on the populations of fish and other commercial species in our seas, or of the wider impacts of fishing on the marine environment, therefore it is unknown if commercial and recreational fishing activities are having a detrimental effect (see section '6.8.2 Other Marine Fish'). However, data suggests that >9% of marine litter found in Guernsey has come from fishing activities, which may be an indication that there is an impact (Clean Earth Trust, 2022). The local fishing fleet are restricted in the catching of quota species through quota decisions made by the EU and the UK, based on scientific advice from the International Council for the Exploration of the Sea (ICES).

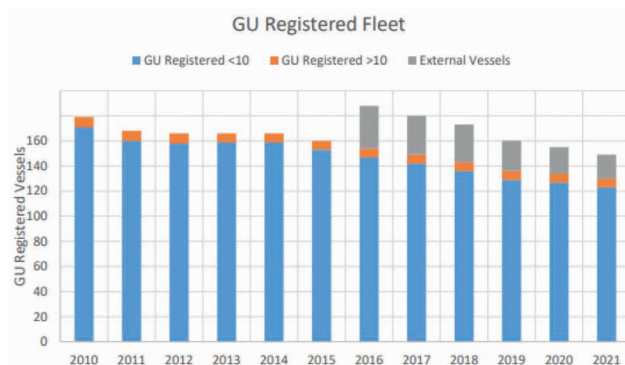


Figure 57 Change in the registered GU fleet numbers over time (Guernsey Sea Fisheries, 2020)

The States of Guernsey Sea Fisheries Team monitor the annual landings of around 40 commercially viable marine species, including some rays and crustaceans. There has been declines in commercially harvested fish landings such as European Sea Bass (*Dicentrarchus labrax*) and Pollack (*Pollachius pollachius*). Some landing declines are due to the changes in fishing method used. For example, reduction in trawling activity has seen a decrease in Smooth-hound and dogfish landings. Limitations or prohibitions on different fishing methods such as long-lining for Tope Shark has also led to a very sharp decline in landings (Guernsey Sea Fisheries, 2020).

Shore gathering includes seaweed harvesting, bait digging and foraging for Ormers. Intensive harvesting may reduce the biodiversity of our marine intertidal zone and have further effects on the species that utilise those areas, both through population decline from direct harvesting and indirect impacts of disturbance caused by extraction methods (e.g., digging in Eelgrass beds, trampling and rock turning). While collecting Ormers is regulated by The Fishing Ordinance, 1997, there is no mitigation for damage caused

during the activity such as the turning over of rocks and boulders which impacts this species' food source. As there is no data on the health of our Ormer populations, it is difficult to evidence if our stocks have been or are being harvested sustainably.

Case Study: European Sea Bass

A pre-spawning/ spawning ground for European Sea Bass was located at Boue Blondel, 3 miles west of Lihou. Use of the area determined that a risk-based approach was needed in order to safeguard the fishery, and therefore this site was subject to trawling and netting restrictions in the mid-2000's, with the line-caught fishery continuing until around 2012 as a result of its low-risk impact. In line with EU legislation, Sea Bass was subject to stricter measures to control fishing at the end of 2017 (see Figure 58), and 2018 saw the introduction of 'catch and release' for recreational fishers. In 2019, recreational fishers could keep 1 Sea Bass per day for personal consumption, increasing to 2 in 2020. Sea Bass fishing is closed to commercial fishers in February and March every year to help maintain a sustainable fishery.

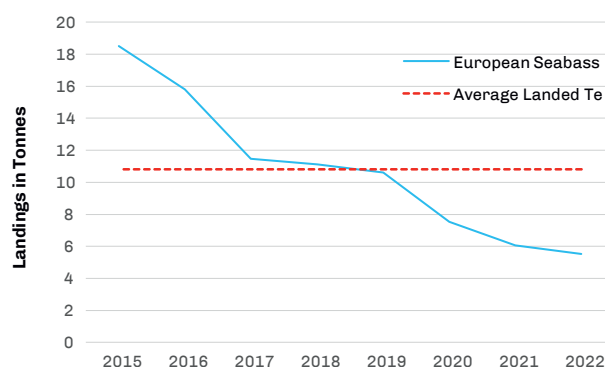


Figure 58 Declines in commercial Sea Bass landings could be due to measures implemented in 2017 to manage the fishery sustainably and restrictions on who can catch and retain species (Guernsey Sea Fisheries, 2023)

Although restrictions are in place and less Sea Bass are being landed, data to determine whether this has led to increases in population is not currently available.

7.6 Land Management

It is widely acknowledged in the UK that the post-war demand for self-sufficient food production has reduced the amount of biodiverse, natural habitats. This is due to the intensification of farming methods and the loss of ecologically important farmland habitat such as hedgerows and permanent grassland to grass or arable monocultures. The same has happened in Guernsey, although on a smaller scale, causing large amounts of land to become less suitable for wildlife. Intensive land management as well as lack of management for biodiversity outcomes has driven habitat change and species decline.

Improved grassland is the dominant habitat type in Guernsey, accounting for 21% of the total area (see section '5.2 State of Grasslands'). This land is typically used for silage, grazing or sometimes amenity purposes and has been 'improved' through applications of fertilisers and pesticides, frequent cutting or grazing and sometimes ploughing and reseeded. As such, it is poor habitat for wildlife, and has replaced several areas of species-rich grassland. These improved areas can be species-poor for several decades, even when they are no longer receiving agricultural inputs. Other agricultural habitats include Arable Land and Short-term Ley. The combined total area of these 3 habitats increased in Guernsey by 14% since 1999 (Hayward & Scopes, 2019b) and since 2010, when it was first added, short-term arable ley increased by 15% between 2010 to 2018 (Hayward & Scopes, 2019a) (see Figure 59). Leys are intensively managed grasslands for silage or grazing, which are regularly



ploughed and reseeded with single species high productivity grass. There is little protection against activities which are exempt from States of Guernsey planning requirements, such as ploughing. Traditionally, Arable Land in Guernsey supported a wide diversity of annual flowers, which needed disturbed land to thrive. Intensive management has reduced floral diversity; threatens our soil health and can release carbon from soils into the atmosphere due to activities like ploughing (Hayward & Scopes, 2019a).

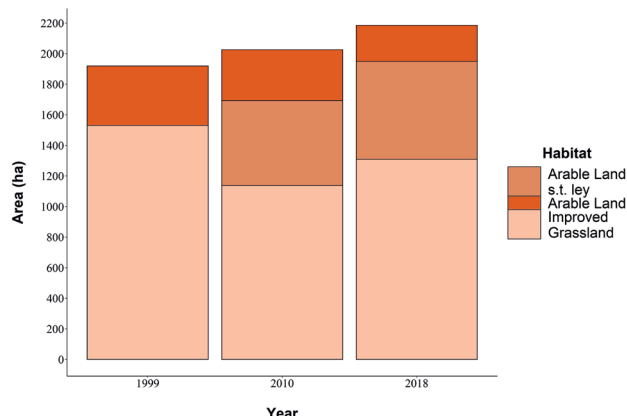


Figure 59 Area of Arable Land, Short-term Ley, and Improved Grassland found in Guernsey (Hayward & Scopes, 2019b)

The increase in these 'improved' habitats has caused declines in many of our species. Many birds rely on seeds produced by cover crops and wildflowers, or permanent grasslands cut late for hay for nesting, which are no longer present in many farming systems. Several species of farmland birds are now extinct as breeders in Guernsey, such as the Yellowhammer (*Emberiza citrinella*) and Corn Bunting (*Emberiza calandra*). Other species such as Linnet and Skylarks, have declined considerably (La Société Guernesiaise Ornithological Section, 2024) (see section '6.4.1 Terrestrial Birds').

The conversion of agricultural land to domestic curtilage has amplified the need for intensive land management. Gardens on former agricultural land which has been extended to domestic curtilage increased in total area in Guernsey by 39% from 2010 to 2018 and are usually regarded as amenity grassland. These areas are heavily managed, closely mown lawns or have been reseeded, often with little biodiversity present. Other areas that are usually heavily mown include parklands, which are classed as having 30% tree cover, and highly mown lawns and are typically species-poor. The area of Parkland has increased in Guernsey by 155% overall since 1999 and Amenity Grassland has increased by 33% since 1999 (see Figure 60) (Hayward & Scopes, 2019a), often replacing habitat of high ecological value with very low biodiversity alternatives.

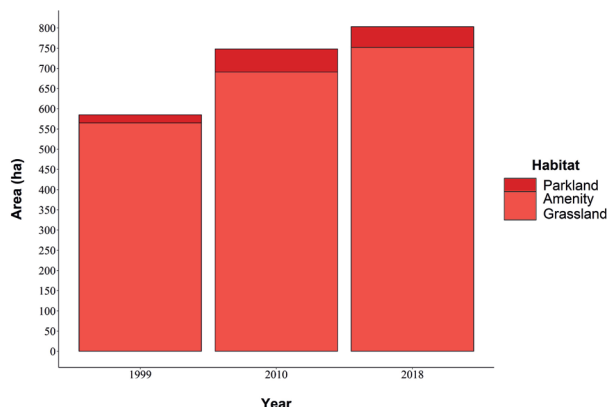


Figure 60 Area of Parkland and Amenity Grassland found in Guernsey (Hayward & Scopes, 2019b)

Domestic gardens and parks have considerable potential as habitat for wildlife if they are managed sympathetically. These spaces make up around 1/3rd of Guernsey's area (Barnes et al., 2021). With our species-rich grasslands at risk from scrub encroachment, conversion to improved grassland, and inappropriate management, gardens could provide shelter and food for many displaced species. Similarly, our hedge banks are excellent wildlife corridors between habitats and could help to create a network between our natural and sympathetically managed parks and gardens, improving connectivity between habitats. There are no statutory requirements in place for the management of hedgerows and earth banks for biodiversity purposes. Roadside hedgerows and earth banks have a legal requirement to be cut twice a year. This regime does help preserve grass earth banks by eliminating rank species such as Bracken. However, some earth banks are poorly managed and are cut too often and too severely. In 2018, 29km of earth banks were classed as 'gardened', meaning they are heavily managed (Hayward & Scopes, 2019a). They are also frequently planted with non-native species and sometimes covered in artificial turf (see section '5.3.4 Species-rich hedges'). There is guidance available, promoted by the States of Guernsey, which provides advice for the sustainable cutting of roadside hedges to help animals and plants thrive¹⁰.

Cutting too close to earth banks will expose soil and allow vigorous plants like nettles and docks to dominate. These species are fast-growing and harder to manage, and their presence also reduces the diversity of plant species. The States of Guernsey advise that earth banks should have a minimum of 10cm of vegetation left after cutting to reduce the risk of desiccation and erosion, to allow vegetation to establish, and to reduce faster growing 'pioneer' plants such as nettles and docks (States of Guernsey, 2022b).

Conversely, lack of management can also be detrimental to biodiversity. Land abandonment can lead to an increase in scrub and woodland (see section '5.3 State of Woodlands and Hedges'), with dense scrub increasing by 64% from 1999 to 2018 (see Figure 61) (Hayward & Scopes, 2019a). Scrub encroachment and lack of grazing can result in degradation of habitat quality and reduction in biodiversity. While scrub is also a valuable habitat, providing food and nesting sites, it is less biodiverse compared to our species-rich grasslands. A balance is needed to implement good land management practices, particularly in areas of high conservation value like Priority Habitats, SSS and ABI, to increase our biodiversity.

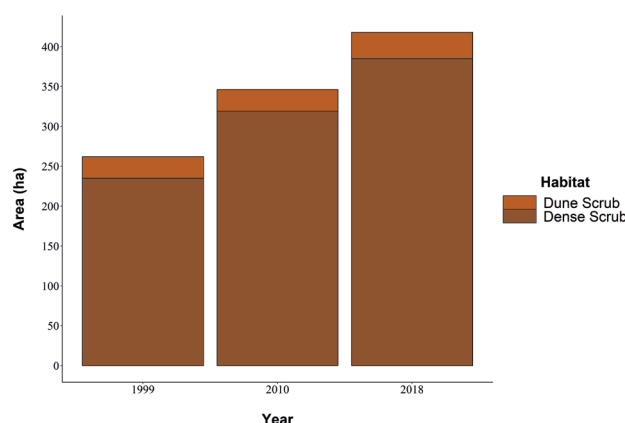


Figure 61 Area of scrub in Guernsey (Hayward & Scopes, 2019b)

The extent of private land managed under effective conservation measures could contribute to increasing the awareness, understanding and support for nature, a need identified by the States of Guernsey 2020 Strategy for Nature.

¹⁰ <https://www.gov.gg/hedgecutting>

7.7 Gaps in Knowledge and Understanding

While all the drivers of change discussed above are certainly having a big impact, they are predominantly anthropogenic, meaning they are caused by human activities and could theoretically be reversed by changes in our activities. A lack of awareness amongst individuals and organisations about the importance of biodiversity, as well as the perceived level of risk and cost to change our behaviours and systems, are pressures that hinder attempts to conserve our natural environment.

People are less likely to participate or invest in conservation if they don't understand why it is so important. There is a general lack of engagement with nature in communities, especially in young children, which is also being seen in Guernsey. An increase in nature connectedness and education in schools could help to change this. In Guernsey, some natural environment education is undertaken in primary schools, but there appears to be little conducted at the secondary school stage. Events organised by numerous on-island nature-related charities are well attended, suggesting the will to engage is present in parts of the community. Local social media groups are also popular and help members of the public to learn identification skills and the importance of specific species. An increase in people's engagement with nature develops an increased empathy with the natural environment leading to changes in behaviours that reduce negative, anthropogenic impacts. Encouraging a passion for the natural environment in the younger generation of Guernsey and Herm will help to address the lack of knowledge and understanding of the importance of the natural environment generally.

In Guernsey and Herm, there is a considerable lack of biological data available to inform actions and decision-making. Data on spatial extent and scale; departure from natural conditions; the irreversibility and lasting effects of change; and the scale of effects on the things we value should all be better understood. This is especially highlighted in this report, in which birds appear to be the only group with sufficient long-term data to enable us to determine which species are declining and which are improving. However, we still do not have sufficient data to help us understand the reason for changes in bird populations over time, which prevents us from understanding how we can best help. Lack of species population trends are a concern, as we cannot make the best use of our resources by targeting efforts if we do not know what aspects of the natural environment most urgently needs our help and how. We do not have enough data to be able to risk assess our habitats and species to determine which should be prioritised for support. Encouraging long-term citizen science monitoring will help the public to engage with nature, improve understanding of its importance and increase the knowledge base generally. Additionally, citizen science data contributes to the provision of much needed data about our natural environment, which will help identify appropriate conservation measures and provide individuals and communities with the real sense that they can make a difference.

Measuring the changes in abundance and distribution of Priority Species and Habitats is an indicator in the States of Guernsey 2020 Strategy for Nature, for maximising the diversity of species and ecosystems (Objective 5). Additionally, the accessibility of data is an indicator towards Objective 8: 'Share and use information effectively' in that Strategy.



**Increasing our
engagement with
nature can lead to
positive behaviour
that reduces impacts
on the natural
environment**



8. How to Help

Better education, the availability of guidance and effective policies, assessment of business impacts, and the introduction and enforcement of robust legislation can help ensure that our natural environment, our habitats, and our species are protected and enhanced for the health of our economy and the well-being of our island community, both now and into the future.

There are many great organisations who are already supporting the natural environment in the work that they do, from biological data collection to Sour Fig clearance to nature education events. Corporate support is a valuable way to help these local charities in their work.

There is always room for more work to be done. Find out more in this chapter about what you can do to reduce your impact on the natural environment, and how you can help us enhance native biodiversity in Guernsey and Herm.

8.1. Individuals

There are many small and big changes that we can implement into our daily lives which will benefit nature.

8.1.1 Record your biological sightings

An important way that islanders can help address data gaps and protect the natural environment is by recording sightings of local wildlife. Using software such as iRecord or iNaturalist which are free apps, facilitates the submission of wildlife sightings from multiple sources, particularly the public¹¹, to the Guernsey Biological Records Centre. Submission of sightings can include native or invasive non-native species and need only include the location, date and number seen. This is important in helping to understand abundance and distribution across Guernsey and Herm. In particular, there is limited data surrounding our important marine habitats, especially underwater areas which are hard to survey. Increasing our knowledge through an increase in the submission of biological sightings, or records, will help inform conservation measures.

8.1.2 Volunteer

There are many citizen science surveys in which individuals can take part, including:

- Big Butterfly Count¹²
- UK Butterfly Monitoring Scheme (UKBMS)¹³
- Plant Alert¹⁴
- Garden BirdWatch¹⁵
- PondNet Spawn Survey¹⁶
- Guernsey Seasearch¹⁷
- Bailiwick Eelgrass Exploration Project (BEEP)¹⁸
- The Big Seaweed Search¹⁹
- The Great Eggcase Hunt²⁰

Additionally, there are organisations, many of which lead the above surveys, which you can volunteer with and contribute to in other ways, to support the amazing work they do protecting our natural environment. These include the Nature Commission²¹, La Société Guernesiaise²², Guernsey Conservation Volunteers²³, the National Trust of Guernsey²⁴, Guernsey Trees for Life²⁵, the RSPB²⁶, and The Clean Earth Trust²⁷. The initiatives and projects available through these organisations help indicate progress against Objective 1 of the States of Guernsey 2020 Strategy for Nature: 'Encourage everyone to get out into nature', and Objective 7: 'Bring nature to life through learning'.

Contact the Guernsey Nature Commission to find out more about how to get involved²⁸. It is important to feed into these national surveys, to help build a picture of the state of nature in Guernsey and Herm and more widely in the British Isles.

8.1.3 Use your love of nature to influence

Influencing those around you, including your friends, family, and decision-makers at business and government level is a great way to help ensure your love of nature is considered. Letting your Parish or Government representatives know that you would like to see better outcomes for the natural environment is a tool available to us all.

8.1.4 Garden for Nature

1/3rd of terrestrial habitats in Guernsey consist of domestic gardens (Barnes et al., 2021). If everyone gardened for wildlife, this would provide a major boost to many species, and especially pollinators.

Here are some ways to help wildlife in your garden and associated areas:

- Trim hedges infrequently, as little as every three years. Avoid cutting hedges during bird breeding season which is usually between March and August (La Société Guernesiaise, NDa)
- Consider alternatives to pesticides, such as using organic gardening methods. If using pesticides, reduce the use to help promote insect populations and follow the appropriate guidelines²⁹
- Plant linear features, such as native hedging to connect habitats and provide foraging routes
- Where lighting is needed, use wildlife-friendly outdoor lighting
- Create wet areas in your gardens such as ponds or little pools
- Plant vegetation around the margins and middle of ponds to help insects during their life cycles
- Create woodpiles, compost heaps and leave rotting logs in the garden as homes for nature
- Grow a diverse range of native wildlife-friendly plants³⁰ throughout the year
- Leave dead plant matter and hollow stems for overwintering larvae
- Mow less frequently or take part in 'No Mow May', 'Let it Bloom June' and 'Knee-high July'³¹
- Leave fallen fruit for insects and birds to feed on
- Leave bare soil in sunny areas
- Put up bird feeders, nestboxes and provide water.
- Know what you grow – do not plant invasive non-native species and dispose of garden waste responsibly so that invasive plants are not released into the wild

It is recommended that you understand what you have in your garden before making any changes. Your garden may be perfect for wildlife just as it is!



Here are some actions that you can take or support to reduce the impact of light pollution:

- Use low-intensity lighting with warmer hues
- Use motion sensitive lighting or part-night lighting
- Remove unnecessary indoor and outdoor lighting

More information can be found at the Bat Conservation Trust's 'Bats and Artificial Lighting at Night Guidance'³²

8.1.5 Consider the impacts of your activities on the environment

- Always follow the Wildlife Code of Conduct for responsible observation of marine life³³, including keeping your distance from seals, seabirds and other marine mammals
- Always follow the 'Strictly for the Birds' Code of Conduct for birdwatchers and wildlife photographers³⁴
- Call the GSPCA if you find sick or injured wildlife
- Always recycle plastics and dispose of litter and dog waste responsibly
- Take part in training to help rescue marine mammals in distress, such as the British Divers Marine Life Rescue Marine Mammal Medic Course³⁵
- When collecting Ormers and rock pooling, ensure rocks are replaced to their original location and orientation
- Use the savvy navy app³⁶ when anchoring to avoid damage to Eelgrass beds
- Always stick to footpaths where possible
- Follow the dog-friendly beaches rules in summer and prevent pets from frightening/harassing wildlife by keeping them on a lead
- Keep your distance from wildlife and give them space
- Leave no trace of your presence

8.2 Businesses

Businesses have a considerable role to play in protecting and enhancing our natural environment. Increasing employee knowledge and employment opportunities relating to the natural environment on-island, and making internships, work placements, and graduate schemes available, as well as upskilling eager volunteers, will enhance our overall resource, expertise and knowledge, leading to more effective biodiversity outcomes. Additionally, businesses can assess the impacts of their activities on the natural environment and take positive steps to avoid, mitigate or offset those impacts.

The extent of private land managed under effective conservation measures (including land owned and utilised by businesses), and the inclusion of biodiversity considerations into business activities in Guernsey, are indicators for increasing the awareness, understanding and support for nature in the States of Guernsey 2020 Strategy for Nature. It is particularly important for the business community to align with Goal A, Objective 3 – 'Ensure the economic, social and environmental value of nature is understood and integrated into local decision-making' (States of Guernsey, 2020a).

8.2.1 Land Managers

With land a limiting factor in Guernsey, it is important that habitats in the countryside benefit our wildlife as well as being productive for agriculture. While local farming methods on the whole are less intensive than in the UK, there are methods that can help improve this further. Introducing

nature-friendly farming using regenerative methods could help reduce pollution, improve soils, prevent carbon loss and support greater biodiversity. Leys could be converted to permanent pastures and areas of land could be set aside for plants and animals.

These could be left as cover crop corners, seed areas or flower margins to benefit birds and insects. It is always difficult to find a balance between financial viability for farmers with maximum yields and productivity and supporting wildlife.

The availability of financial incentives to offset any reduction in yields resulting from nature positive practices, similar to agri-environmental schemes in the UK, could help make sure both farmers and wildlife do not lose out. Local farmers and land managers look after our countryside, and it is important to support the work that they do.

Many areas of land in Guernsey are not actively being farmed but are equally important. These areas can equally make a contribution to the island's ecology.

Here are ways you can help:

- Develop a Biodiversity Action Plan (BAP) to identify and implement appropriate biodiversity improvements
- Ensure that existing features of high wildlife value are preserved, such as species-rich grasslands
- Reduce frequency of cultivation and leave permanent grasslands wherever possible
- Add conservation headlands, cover crops and seed margins in farming areas
- Plant berry producing native hedging
- Create biodiverse margins which are not cultivated
- Cut internal hedges less frequently
- Consider alternatives to pesticides, such as using organic methods. If using pesticides, reduce the use to help promote insect populations and follow the appropriate guidelines³⁷

Progress towards implementing sustainable agricultural practices which include a biodiversity and ecosystem approach is an indicator of Objective 6 of the States of Guernsey 2020 Strategy for Nature. Objective 6 is about reducing pressures on nature and ensuring our natural capital and assets are resilient.

8.2.2 Fishing

For fishing to be sustainable in the long-term, we need to ensure that the quota sizes are evidence-based, and that sufficient data is available to enable the implementation of effective management. Supporting the implementation of Marine Protected Areas (MPAs) in our territorial waters, could include measures such as controls on damaging fishing activities in sensitive areas. This will help protect our fragile marine habitats and allow the associated species, including commercial species, to recover and support wider populations. There is also a Marine Wildlife Code of Conduct, which provides guidance so we can enjoy water activities and respect our wildlife.

Here are other ways that you can help:

- Follow restrictions and best practice for shellfish and seaweed harvesting
- When collecting Ormers, ensure rocks are replaced to their original location and orientation
- When bait digging, avoid damaging animals and habitats, take only what you need, leave enough adult organisms to repopulate and fill in any holes afterwards

- Always follow the Wildlife Code of Conduct for responsible observation of marine life³⁸
- Submit data on the habitats and species you encounter to the GBRC or via iRecord³⁹
- Take only what you need when fishing and follow size limitation rules.

Progress towards implementing sustainable fisheries and shore gathering that include a biodiversity and ecosystem approach is an indicator of Objective 6 of the States of Guernsey 2020 Strategy for Nature. Objective 6 is about reducing pressures on nature and ensuring our natural capital and assets are resilient.

8.2.3 Financial and other sectors

Financial services gain significant economic value from ecosystem services. In 2021, the total asset value of ecosystem services in the UK was just over £1.5 trillion, a 3% increase since 2017 (Office for National Statistics, 2023). Estimates show that the global stock of natural capital per person declined by nearly 40% in the 2 decades prior to 2014, evidencing the cost to nature of unsustainable growth (Dasgupta, 2021). Our economies are not external to nature but are embedded within it. As such, it is essential that the portfolio of natural assets is managed sustainably for future productivity, and that the value of goods and services is a true reflection.

Here are ways that your business can help:

- Implement an Environmental Social Governance (ESG) internal policy with associated frameworks, to measure, manage, reduce, and report on business operational impacts such as pollution and climate change.
- Instil a culture of accountability for environmental impacts and dependencies in your business activities and decisions.
- Consider the implementation of the relevant IFRS Foundation's International Sustainability Standards Board (ISSB) accounting standards general sustainability (IFRS S1) and climate (IFRS S2) and the inclusion of Task Force on Nature-related Financial Disclosures (TNFD).
- Include sustainability, environmental impacts, and horizon scanning for relevant environmental and biodiversity regulations as regular agenda items at Board/ Senior Management meetings.
- Appoint a sustainability committee or group with representatives at various seniority levels from across the business divisions with specific responsibility to drive the environmental, social and governance policy and associated agreed changes.
- Include strong biodiversity and nature-positive performance outcomes in sustainable finance investment strategies and associated services.
- Invest time and financially support local nature-based solutions, which will not only help address biodiversity loss but also improve our resilience to the impacts of climate change, including support to third sector natural environment organisations to achieve their aims.
- Evaluate, prioritise and work to understand and overcome biodiversity risks in investment and insurance portfolios.
- Commit to devise and implement a pathway to net zero and support disclosure on emissions from your business and its activities.
- Measure and disclose your businesses nature-related financial risks along the supply chain.

- Implement educational programmes and opportunities within your workplace to increase the awareness, knowledge and support for the natural environment.
- Expand your business sustainability targets to directly integrate nature and the reduction of biodiversity loss.
- Manage any property with nature in mind; reduce light pollution, install bird and bat boxes, manage land without pesticides and with native plants. Follow the States of Guernsey guidance produced by ACLMS to help islanders to protect and enhance biodiversity around their buildings.

8.3 Government

Guernsey is lacking in progress in terms of nature conservation by the government. This is particularly evident in the absence of robust wildlife and habitat protection legislation. There is also a lack of representation for wildlife in the decision-making processes in the States of Guernsey. However, funding and policy integration has increased year-on-year since the adoption of Guernsey's first Biodiversity Strategy in 2015.

Progress towards integrating nature into decision-making across the States of Guernsey and the expenditure on nature by the public sector are indicators in the States of Guernsey 2020 Strategy for Nature for ensuring the economic, social and environmental value of nature is understood and integrated into local decision-making (Objective 3).

8.3.1 Policy and Legislation

Robust policies and legislation are an important tool in ensuring the protection of our habitats and species. They provide commitments and the pathways to achieving them, as well as incentives for compliance/ deterrents to non-compliance, creating a framework to achieve certain behaviours for positive outcomes. Other conservation measures, such as education and voluntary habitat or species management, do not always provide a sufficient lever to ensure positive biodiversity outcomes, particularly when there is a cost associated with the measure. Policy and legislation can help ensure that areas of important biodiversity are protected; there is a consequence to intentional biodiversity loss, and restoration of degraded areas is prioritised.

Becoming a member of various relevant national and international conventions, treaties and agreements would show other jurisdictions that Guernsey is committed to valuing and enhancing our natural habitats and other favourable areas. Extending the UK's signatory to the Convention of Biological Diversity (CBD), would mean that Guernsey and Herm must meet certain targets for nature conservation. The Kunming-Montreal Global Biodiversity Framework is part of the CBD and consists of global targets to be achieved by 2030 to help conserve biodiversity. This includes conservation of 30% of land, sea and inland waters by 2030, halving the introduction of invasive species and restoring 30% of degraded ecosystems (U. N. Environment, 2022).

Objective 6 of the States of Guernsey 2020 Strategy for Nature relates to the reduction of pressures on nature and ensuring the resilience of our nature capital and assets. One of the indicators towards that objective is the extent of explicit consideration and inclusion of biodiversity mitigation in climate change, biosecurity and INNS, pollution control, and land management related regulation, policy and plans.

8.3.2 Sympathetic Land Management for Biodiversity Benefits

With the increased degradation and fragmentation of

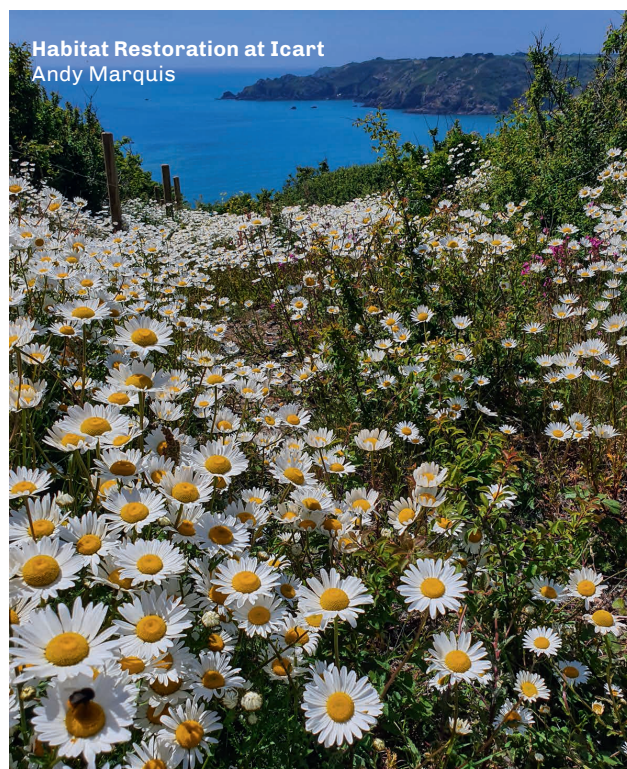


habitats, it is vital that our remaining habitats are connected. Landowners in Guernsey have a role in facilitating the improved connectivity between habitats in Guernsey as a way of connecting core areas of well-functioning ecosystems, together with other 'wildlife-friendly' areas in the island. Utilising land management practices which support and promote biodiversity, and avoiding the absence of sympathetic land management, would help ensure that land owned and managed by major landowners achieve more biodiversity benefits. Additionally, the creation of new sites for nature and better habitat management on existing States of Guernsey owned sites will improve connectivity.

8.3.3 Improving the Knowledge Base of Civil Servants and Politicians

There is an essential need for the civil service and politicians in Guernsey and Herm to have appropriate knowledge regarding our natural environment. This will help ensure that positive biodiversity outcomes, and the consequences of biodiversity loss, are factored into decision-making processes.

Improving the availability of knowledge about nature to inform decision-making is an objective in the States of Guernsey 2020 Strategy for Nature (Objective 9). An indicator of progress towards achieving this objective is the extent to which, and the success of, robust biodiversity data and knowledge is integrated into States decision-making.



¹¹ About iRecord | iRecord

¹² <https://bigbutterflycount.butterfly-conservation.org>

¹³ Welcome to the UKBMS | UKBMS

¹⁴ Plant Alert

¹⁵ Garden BirdWatch | BTO - British Trust for Ornithology

¹⁶ <https://freshwaterhabitats.org.uk/advice-resources/survey-methods-hub/pondnet-spawn-survey/>

¹⁷ <https://societe.org.gg/wp/seasearch-project/>

¹⁸ <https://www.alderneywildlife.org/current-projects/bailiwick-eelgrass-exploration-project>

¹⁹ The Big Seaweed Search

²⁰ Shark Trust Great Eggcase Hunt

²¹ Nature Commission Guernsey

²² La Societe Guernesiaise – Guernsey's Natural History, Research and Conservation Society

²³ Guernsey Conservation Volunteers | Helping conserve Guernsey's natural environment (gcv.org.uk)

²⁴ The National Trust of Guernsey

²⁵ Guernsey Trees for Life (gtfl.earth)

²⁶ Home - Guernsey Bailiwick Local Group (rspb.org.uk)

²⁷ Home | The Clean Earth Trust

²⁸ Contact Us | Nature Commission

²⁹ <https://www.water.gg/pesticides>

³⁰ <https://societe.org.gg/wp/grow-guernsey-natives/>

³¹ <https://www.plantlife.org.uk/campaigns/nomowmay/>, <https://www.plantlife.org.uk/let-it-bloom-june-no-mow-may-is-over-whats-next/>

³² <https://www.bats.org.uk/news/2023/08/bats-and-artificial-lighting-at-night-ilp-guidance-note-update-released>

³³ Wildlife Code of Conduct - States of Guernsey (gov.gg)

³⁴ <https://www.guernseybirds.org.gg/documents/Code%20of%20conduct%20for%20Guernsey%20birders%20and%20photographers.pdf>

³⁵ <https://bdmlr.org.uk/marine-life-medic-mmm-training-course>

³⁶ <https://www.savvy-navvy.com/>

³⁷ <https://www.water.gg/pesticides>

³⁸ Wildlife Code of Conduct - States of Guernsey (gov.gg)

³⁹ About iRecord | iRecord

9. Conclusion

One of the key themes throughout this report is the lack of data. This report demonstrates that we generally know which species and habitats are present in Guernsey and Herm, particularly on land.

Considerably less certainty is available regarding our marine habitats and species. What could not be included in this report is the true status of the majority of our natural environment, such as whether species populations are declining or increasing and whether our habitats are in a condition able to provide their full suite of ecosystem services. Without this information, it can be difficult to know the state of our habitats and species; where conservation efforts should focus; and what can be done to help.

There is also uncertainty regarding some aspects of the data used in the report. Some of the data comes from studies that have been conducted across a single year (typically dissertations) or that have been collected in an unscientific manner and while valid and useful information, only provides a snapshot rather than a longer-term analysis. These works need to be built upon to enable completeness of datasets and provide further quality information. Citizen science is a great way to collect large amounts of data but can be limited in terms of its quality. It is likely that as citizen science data is collected over a longer time period, statistical analysis can be conducted which will help to remove anomalies in data and account for uncertainties that come hand in hand with amateur biological recording. This will help to ensure that data collected is robust enough to provide evidence on the state of our natural environment. By participating in national schemes with repeatable survey methods and conducting upskilling of volunteers, this will ensure that citizen science data can be included in future reports.

For the habitats and species that we do have trends for, declines have been identified. Our wading birds and seabirds have declined overall, and this is significant as Guernsey and Herm support important national and international populations of these groups. We have lost many breeding species of terrestrial and marine birds, several of which are also declining worldwide such as the Turtle Dove. Our terrestrial natural habitats (see 5.1 Natural Habitats) have decreased overall since 1990, including many of our most biodiverse and species-rich habitats. Unimproved grassland, has become locally extinct, impacting local plants and species higher up the food chain. Given that the species we do have trends for have suffered declines, it is a possibility that species we do not have trends for may be declining without any evidence to demonstrate this. It may also be likely that some of these species are at risk of local extinction and may be lost from the island if nothing is done. More data must be obtained if we are to understand which habitats and species need the most support. Stronger protection can then be introduced to slow and halt declines and make space for nature.

This report has identified 7 threats, some of which may be significant, to our natural environment which have likely contributed to the declines seen. Although more information is needed about how these pressures affect our habitats and species, it is important that we reduce these pressures on our environment as much as possible and as soon as possible, as they will cumulatively impact our habitats and species. Conservation measures cannot be effective if there is no change in the pressures causing declines and losses.

There are many challenges in conserving the natural environment. Conservation measures need to be implemented where they will make a difference to prevent a waste of resources. Native species should take priority

over non-natives, as natives are the bedrock of interactions between habitats and species. While many non-native species are established and have filled niches on the island, their ability to successfully survive outside their native range usually prevents the need for conservation. However, the definition of native and non-native is not clear cut. While definitions have been included for the purpose of this report, there are no clear thresholds which define whether a species is native or not. Some definitions of native preclude human influence, but if there are no records it can be difficult to ascertain whether native species have been present in Guernsey and Herm before the arrival of humans.

The definitions are also subject to opinion. Agreement and cooperation are needed to ensure that native species in decline receive the protection they need, and therefore a clear definition of native is needed for each taxa.

As an island we have an opportunity to lead the way on a small-scale and demonstrate that we can be world leaders in working together to protect and restore wildlife. In this report, section '8. How to Help' has provided actions, so that as an island community we can work together to address these issues. Everybody has an important contribution to make for the protection and enhancement of our natural environment, whether you are an individual, part of a community or business, or are part of the States of Guernsey. Without the combined efforts of all, it is likely that we will continue to see biodiversity loss and further realise the effects of biodiversity loss on our economy and our health and well-being.

The Guernsey Nature Commission would like to thank all the organisations and individuals who assisted in the creation of this report. Much of the available data used has been collected by passionate volunteers, experts, and charities. We are grateful that we have been allowed to include these contributions in the report, as without them it would not be possible to provide the information presented in this report about the current state of nature in Guernsey and Herm.

10. Next Steps for Assessing the State of Nature

The points below are suggestions to improve our knowledge and understanding of the natural environment:

- Assessing the extent, condition and ecological integrity of our terrestrial, freshwater and marine habitats
- Increase our understanding of how the drivers of change interact and intensify over time and in various areas
- Quantifying the benefits that we receive from our natural habitats and ecosystems, beyond direct economic gain from resource use.

The State of Nature outputs will be updated in 2029, providing the opportunity to update our knowledge and highlight new areas of research. It is hoped that in future reports, the gaps in our knowledge, particularly in relation to marine habitats and species, freshwater species, fungi, lichen, and population trend data for most species' groups,

can start to be addressed. These knowledge gaps cannot be addressed without the enthusiasm and passion of islanders, communities, businesses and our government. It is also hoped that improving processes at the Guernsey Biological Records Centre will streamline the data submission and extraction processes, meaning there will be more easily accessible evidence available to be used in these State of Nature outputs. Future reports will also provide updates on the drivers of change. Understanding more about our natural environment is the first key step to being able to better conserve, protect and enhance it. Encouraging the involvement of everyone in biological recording and nature conservation will help preserve our habitats and species for future generations. This will contribute towards Objective 5 in the States of Guernsey 2020 Strategy for Nature, where understanding changes to Priority Species and Habitat abundance and distribution will help to maximise the diversity of species and ecosystems.



Photo: Andy Marquis

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